DOCUMENT RESUME

ED 210 260 SP 019 178

AUTHOR	Huberman, A. M.
TITLE	School-University Collaboration Supporting School Improvement. Volume I: The Midwestern State Teacher Center Network Case.
INSTITUTION	American Univ., Washington, D.C. Center for Technology and Administration.
SPONS AGENCY	National Inst. of Education (ED), Washington, D.C. Research and Educational Practice Program.
PUB DATE	Jan 81
CONTRACT	400-79-0063
NOTE	275p.; For related documents, see SP 019 179-180.
EDRS PRICE	MF01/PC11 Plus Postage.
DESCRIPTORS	Administrator Role; *College School Cooperation; Cooperative Planning; Higher Education; *Institutional Cooperation; Linking Agents; Networks; Organizational Communication; Problem Solving; *Regional Cooperation; Resource Centers; School Community Relationship; *School Districts; *Schools of Education; *Teacher Centers; Teacher Participation

ABSTRACT

A case study was made of an interorganizational arrangement involving collaboration between a college of education, intermediary service agencies, and a collection of schools or school districts. The relationships among partners in the arrangement are examined with a focus on linking mechanisms and boundary-spanning roles. The case study is made of the Statewide Teacher Center Network, and two of its constituent members, the Arcadia Teacher Center and the Three Rivers Teacher Center. All are located in a large, sparsely populated midwestern state. Each of the two centers acted as an intermediary, linking a college of education with surrounding school districts and counties. A description is given of the origins of the Statewide Teacher Center Network and of the Arcadia and Three Rivers Centers. In describing the first two years of collaborations between these institutions, consideration is given to events and activities, available resources, objectives, key persons, barriers and facilitators, and the dynamics of interaction between the institutions. The present collaborative effort is examined, focusing on the main events and institutional context, structure and procedures, changes in objectives, and resource changes. A discussion is presented of the outcomes of the collaboration effort and possibilities for the future. Profiles are given of specific projects at the Arcadia and Three Rivers Centers. Diagrams are presented of the factors that appeared to account for the outcomes obtained in each of the centers studied. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED210260

SCHOOL—UNIVERSITY COLLABORATION SUPPORTING SCHOOL IMPROVEMENT

Volume I
The Midwestern State
Teacher Center Network Case

SCOPE OF INTEREST NOTICE
The ERIC Facility has assigned this document for processing to: P HE
In our judgement, this document is also of interest to the clearinghouses noted to the right. Indexing should reflect their special points of view.

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

A.M. HUBERMAN

Knowledge Transfer Institute
Center for Technology and Administration
The American University

June 1981

Prepared for the
Research and Educational Practice Program
National Institute of Education

SP 019 178

SCHOOL—UNIVERSITY COLLABORATION SUPPORTING SCHOOL IMPROVEMENT:

The Midwestern State Teacher Center Network Case

June 1981

A.M. Huberman
Knowledge Transfer Institute
Center for Technology and Administration
The American University

This study was performed pursuant to Contract No. 400-79-0063 of the National Institute of Education. It does not, however, necessarily reflect the views of that agency.

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

ACKNOWLEDGMENTS

SUMMARY

I. BACKGROUND AND SCOPE OF THE LARGER STUDY..... 1

II. METHODOLOGY..... 6

III. CASE STUDY OF THE MIDWESTERN STATE INTERORGANIZATIONAL ARRANGEMENT (IOA)

PART ONE: HISTORY OF THE MIDWESTERN STATE INTERORGANIZATIONAL ARRANGEMENT

1.1. HISTORY OF THE STATEWIDE TEACHER CENTER NETWORK

1.1.1. Historical and Institutional Context.....11

1.1.2. Institutional Precursors.....17

1.1.3. Philosophical and Ideological Roots.....24

1.1.4. Historical Persons or References, Key Actors in the Creation of the Network.....26

1.1.5. Historical Event Listing.....26

1.1.6. Schematic Flow Model of the Founding of the Network....28

1.2. HISTORY OF THE ARCADIA TEACHER CENTER

1.2.1. Historical and Institutional Context.....30

1.2.2. Institutional Precursors.....31

1.2.3. Philosophical and Ideological Roots.....35

1.2.4. Historical Persons.....37

1.2.5. Historical Event Listing.....37

1.3. HISTORY OF THE THREE RIVERS TEACHER CENTER

1.3.1. Historical and Institutional Context.....39

1.3.2. Institutional Precursors.....41

1.3.3. Philosophical and Ideological Roots.....43

1.3.4. Historical Persons.....43

1.3.5. Historical Event Listing.....43

PART TWO: THE FIRST TWO YEARS OF OPERATION, 1977-1979

2.1. OPERATION OF THE STATEWIDE TEACHER CENTER NETWORK, 1977-1979

2.1.1. Institutional Structure.....45

2.1.2. Objectives During the First Two Years.....47

2.1.3. Founding and Key Persons.....50

2.1.4. Resources Available in the First Two Years..... 50
2.1.5. Events and Activities of the Founding Years..... 52
2.1.6. Social and Interorganizational Dynamics..... 53
2.1.7. Barriers..... 55
2.1.8. Facilitators..... 55
2.2. OPERATION OF THE ARCADIA TEACHER CENTER, 1977-1979
2.2.1. Institutional Structure..... 56
2.2.2. Objectives..... 56
2.2.3. Key Persons..... 60
2.2.4. Resources..... 61
2.2.5. Events and Activities..... 62
2.2.6. Interorganizational Dynamics..... 66
2.2.7. Barriers..... 67
2.2.8. Facilitators..... 67
2.3. OPERATION OF THE THREE RIVERS TEACHER CENTER, 1977-1979
2.3.1. Interorganizational Context and Main Events..... 70
2.3.2. Institutional Structure..... 70
2.3.3. Objectives..... 72
2.3.4. Key Persons..... 73
2.3.5. Resources..... 73
2.3.6. Activities..... 73
2.3.7. Interorganizational Dynamics..... 75
2.3.8. Barriers..... 77
2.3.9. Facilitators..... 77
PART THREE: THE PRESENT CONFIGURATION
3.1. THE STATEWIDE TEACHER CENTER NETWORK, 1979-1981
3.1.1. Main Events and Institutional Context..... 79
3.1.2. Institutional Structure and Procedures..... 80
3.1.3. Changes in Objectives..... 80
3.1.4. Key Persons and Relationships..... 81
3.1.5. Resource Changes..... 87
3.1.6. Teacher Center Network Activities..... 89
3.1.7. Social and Interorganizational Dynamics..... 90
3.1.8. Barriers..... 92
3.1.9. Facilitators..... 93

3.2. THE ARCADIA TEACHER CENTER, 1979-1981
3.2.1. Main Events and Institutional Context 94
3.2.2. Institutional Structure and Procedures 94
3.2.3. Changes in Objectives 95
3.2.4. Key Persons and Relationships 96
3.2.5. Resource Changes 97
3.2.6. Arcadia Teacher Center Activities 97
3.2.7. Interorganizational Dynamics 106
3.2.8. Barriers 116
3.2.9. Facilitators 117
3.3. THE THREE RIVERS TEACHER CENTER, 1979-1981
3.3.1. Main Events and Institutional Context 123
3.3.2. Institutional Structure and Procedures 123
3.3.3. Changes in Objectives 125
3.3.4. Key Persons and Relationships 127
3.3.5. Resource Changes 127
3.3.6. Three Rivers Teacher Center Activities 128
3.3.7. Interorganizational Dynamics 133
3.3.8. Barriers 142
3.3.9. Facilitators 145
PART FOUR: OUTCOMES
4.1. OUTCOMES FOR THE STATEWIDE NETWORK
4.1.1. Individual-level Outcomes 149
4.1.2. Organization-level Outcomes 149
4.2. OUTCOMES FOR THE ARCADIA TEACHER CENTER
4.2.1. Individual-level Outcomes 153
4.2.2. Organization-level Outcomes 156
4.2.3. A Map of Linkage-related Outcomes 160
4.3. OUTCOMES FOR THE THREE RIVERS TEACHER CENTER
4.3.1. Individual-level Outcomes 165
4.3.2. Organization-level Outcomes 167
4.3.3. Negative Outcomes and Costs 171a
PART FIVE: THE FUTURE
5.1. FUTURE OF THE STATEWIDE NETWORK 172
5.2. VIEW OF THE FUTURE AT ARCADIA 174
5.3. VIEW OF THE FUTURE AT THREE RIVERS 177

PART SIX: SERIALS

6.1. SERIALS AT ARCADIA

6.1.1. The Poets-in-Residence Project.....179

6.1.2. The Micro-computer Project.....184

6.1.3. The New Room.....188

6.1.4. The Nature Studies Area.....191

6.2. SERIALS AT THREE RIVERS

6.2.1. The School Board Meeting.....197

6.2.2. The Micro-computer Project.....200

6.2.3. The One-day Shut-down.....204

PART SEVEN: CAUSAL NETWORKS

7.1. GENERAL MODEL.....207

7.2. CAUSAL NETWORK FOR ARCADIA

7.2.1. Introduction.....209

7.2.2. How the Network is Organized.....209

7.2.3. Reading the Network for the Arcadia Site.....210

7.3. CAUSAL NETWORK FOR THREE RIVERS.....216

APPENDIX I: A WALK AROUND THE ARCADIA TEACHER CENTER

LIST OF FIGURES AND TABLES

		Page
Figure I-1	Interorganizational Linkages Involving Universities and Schools	4
Table II-1	Breakdown of Interviews by Site and Role . .	7
Table II-2	Breakdown of Observations by Site and Activity	8
Figure 1-1	Influence and Relationship Networks at the Time of Creation of State-Level Teacher Center Network	21
Table 1-1	Event Listing For Founding of State-Level Teacher Center Network and Local Teacher Centers	27
Figure 1-2	Key Antecedent and Process Variables Leading to Founding of Network	29
Figure 1-3	Main Antecedent and Process Variables Leading to Establishment of Teacher Center at Arcadia	40
Figure 2-1	Foundation Support of the Total Project. . .	51
Figure 2-2	Foundation Support of the Three Rivers Center	51
Figure 3-1	Frequency and Location of Communications Among Key Persons in Teacher Center Network (1 Month)	82
Table 3-1	Summary of Activity Logs over One Month for Key Persons in State and Local Level Teacher Centers	84
Figure 3-2	Column Inches Relating to Materials as a Proportion of Total Column Inches in the Center Newsletter over Three School Years. .	99
Table 3-2	Sources of Expertise for Workshops and Courses at Arcadia	104
Table 3-3	Conflict at Arcadia	107
Table 3-4	Bargaining-Exchange Issues at Arcadia . . .	109
Table 3-5	Frequency of Different Knowledge Types Underlying Teacher Center Activity (from 10 Newsletter Issues)	110
Table 3-6	Distribution of Forms and Validation Bases of Knowledge Resources Transmitted by the Teacher Center (% of Total Estimated). . . .	112

		Page
Table 3-7	Use of Knowledge Resources by Teacher Center Participants at Arcadia and Three Rivers (Estimated % of Total)	113
Table 3-8	Linkage Functions of Boundary Personnel at Arcadia	115
Table 3-9	Facilitating Factors Mentioned by Respondents and their Institutional Effects: Arcadia Site	118
Table 3-10	Sources of Expertise for Workshops and Courses at Arcadia and Three Rivers	131
Table 3-11	Conflict at Three Rivers	134
Table 3-12	Bargaining-Exchange Issues at Three Rivers. .	136
Table 3-13	Linkage Functions of Boundary Personnel at Three Rivers and Arcadia	141
Table 3-14	Barriers at Three Rivers	143
Table 3-15	Facilitating Factors and their Institutional Effects: Three Rivers Site	146
Table 4-1	Degree of Institutionalization: Midwestern Case	151
Table 4-2	Individual-Level Outcomes for Midwestern Site: Arcadia	after 153
Table 4-3	Organization-Level Outcomes for Midwestern Site: Arcadia	after 156
Figure 4-1	Linkage Patterns and Knowledge Flows Related to Teacher Center Activity: Arcadia .	161
Table 4-4	Individual-Level Outcomes for Midwestern Site: Three Rivers	after 165
Table 4-5	Organization-Level Outcomes for Midwestern Site: Three Rivers	after 167
Figure 7-1	General Model for the IOA	208
Figure 7-2	Causal Network: Arcadia	after 209
Figure 7-3	Causal Network: Three Rivers	after 216

ACKNOWLEDGMENTS

This study would never have seen the light of day without the contributions of Dawn Badrick to field research, Laurie Huberman to the coding of field notes, Pat Cox to editing, Debbie Roaden to the production of charts and figures and Sara Davidson to production of the text.

SUMMARY

Background and scope of the larger study. While there are abundant studies of the role of the university as a knowledge builder and knowledge center, less is known about the flow of knowledge and expertise between the university and the world of practice. Often, such processes of knowledge transfer have been left to chance. In other cases, there have been loose, predominantly informal links between knowledge producers and users. More recently, as colleges and universities extend their service and outreach functions, more formal interorganizational arrangements have emerged. The case study reported here is one of three such interorganizational arrangements (IOAs) that were analyzed, each within a different region, of a different age and having a unique institutional configuration, but all involving collaboration between a college of education, intermediary service agency and a collection of schools or school districts.

The study as a whole drew on two theoretical frameworks. First, interorganizational theory helped to map the relationships between partners to the interorganizational arrangement, with a focus on linking mechanisms and boundary-spanning roles that bridged the college of education and community of schools. Theoretically, closer and multiple links should result in greater interorganizational activity, interdependency and reciprocal impact. The use of interorganizational theory also called for an analysis of knowledge flows between units as resource exchanges or transactions depending on the relative power of each party in the arrangement. Secondly, knowledge transfer theory helped to trace the movement of educational ideas, practices and products between participating units as components of a communications process, in which resource-providing institutions such as a college of education diagnosed needs and provided solutions to problems diagnosed within resource-using institutions such as schools. Note that roles could be reversed here, with the college of education as a recipient of practice-derived knowledge. Both theoretical frameworks were intended to illuminate answers to the principal research question, namely: to what extent and in which ways do interorganizational arrangements facilitate changes in instructional practice within local schools?

Methodology. Our design called for a multiple-case study using a common set of research questions for each of the IOAs. Data were collected during site visits by means of retrospective interviewing, observations and the collection of pertinent documents. Data collection followed a sequence of progressive focussing, leading to the emergence of a set of some 50 causal variables common to all three cases. Preliminary findings from all sites were fed back to site informants for verification.

Analysis of the Midwestern state case. The case contains three partially separate sub-units: the Statewide Teacher Center Network as a whole and two of its constituent members, the Arcadia Teacher Center and the Three Rivers Teacher Center. Each of the two centers acted as an intermediary, linking a college of education with surrounding school districts and counties.

Origins of the Statewide Teacher Center Network: The network originated in a large, wealthy, sparsely populated midwestern state. Several cultural and institutional features of the state set a context for the network: institutional decentralization, strong popular support for education, a highly differentiated infrastructure of state universities and colleges, doctrinal pluralism, low mobility and the primacy of the outreach-service function in state universities and colleges. The original proposal called for a network of centers spanning the state, each acting as a local switchboard that connected teachers with available sources of information and expertise found either at the local state college or university, in the surrounding community or among other teachers. The prevailing ideology was that local teachers should themselves define their staff development needs and play a dominant role in the governance of the centers. Many of these ideas were borrowed from an experimental teacher education program carried out between 1968 and 1972 at one of the state universities. The founders of the statewide network came principally from university staff and from program graduates who had returned to local districts throughout the state where they took up key administrative posts. The single most active agent in the creation of the statewide network had been director of the experimental program and later dean of the college of education at the state university where the network was to be coordinated. Chiefly through his effort, four centers were created or brought together in 1977.

Origins of the Arcadia Teacher Center. Arcadia is a small (population 3,000), rural community housing Arcadia State College, most of whose 650 students prepare for careers in teaching. The teacher center, which predated the statewide network, grew from the experimentation of an Arcadia State staff member with a hands-on, materials-centered approach to pre-service teacher training. After relocation in a cafeteria-size facility, this unit developed into a voluminous bank of educational resource materials, including kits, idea books, teacher-made materials, integrated curriculum units and audio-visual aids, all set out for easy access in separate areas interspersed with isolated corners with rugs, indirect lighting, armchairs and tables for small group meetings. With the assistance of a departmental chairman, the skeleton staff embarked on a number of special projects involving in-service teacher training. These projects brought in additional funds for further increasing the resource bank; they also led to closer collaboration between state college staff who were active in these projects. In 1977 the Arcadia State center became one of the charter members of the statewide network.

Origins of the Three Rivers Teacher Center. One of the largest cities in the state (pop. 45,000), Three Rivers is the home of North Central University, where the experimental teacher education program was housed and the statewide network founded. The local teacher center grew from informal talks between the dean of the college of education and members of the local teachers' association. Owing to uneasiness and social distance between the college of education and local teachers, the project took hold more slowly. District administrators were cautiously favorable to the idea. The final proposal called for a center in "neutral" territory between the university and the school district. Unlike Arcadia, a premium was put on between-teacher exchanges, with less input from the college of education.

Initial years of operation (1977-79). The chief tasks of the statewide network consisted in consolidating the four local centers and putting into place a complex governance system. Three operational objectives also emerged: the creation of a statewide "human resource exchange," a plan for teachers to become "significant knowledge producers" and a program for accelerating curriculum and instructional change throughout the state. Through its periodic policy and advisory board meetings, the network also led to the co-optation of delegates, notably state officials and state college staff; the creation of a state forum on educational policy; and the resocialization of experimental program graduates. Operations were eased in the initial years by external funds covering half the total costs, with a provision that local school districts and colleges assume all funding at the end of five years.

The Arcadia Teacher Center drew on these external funds and on membership in the network to expand its resource collection and in-service activities. The firm "nesting" of center staff within the state college appeared to provide a more stable institutional base than at the three other centers. The basic mix of activities included a one-time workshop series, a summer workshop series, an ongoing project supporting individual attempts to modify classroom practice, drop-in and consultations, use of the materials bank and two-week visits by area teachers and their classes, during which teacher interns modeled new materials and instructional methods. Teacher center staff gave most workshops and consultations. The center thrived. By the end of the second year of operations as a member of the network, 45% of the elementary teachers and 20% of secondary teachers in participating school districts had become multiple users. There was evidence of fairly widespread changes in local classroom practice and of increments in capacity (more diversified instructional formats, greater individualization, enriched curricula, more strength in previous areas of weakness). In addition, other departments in the college began using the center's facilities, thereby multiplying within-college exchanges.

By contrast, the initial years of the Three Rivers Center were inauspicious. Leadership was poor; two of the original three coordinators resigned. Facilities were cramped and peripheral to the city. Programming was reportedly slack. During the second year a basic program format gradually emerged, consisting of one-time workshops on classroom-relevant topics, "sharing" evenings among teachers, continuous workshops on more general themes (e.g., adolescent development), drop-ins and materials borrowing and the creation of integrated curriculum units called "activity center." Second-year attendance rose to 2,200, many of these repeat users. Some 50% of all district teachers and 25% of county and parochial school teachers used the center on at least one occasion.

The present configuration (1979-81). By 1979-80, five additional teacher centers had been created within the statewide network, with two more in preparation. Budget constraints, however, meant that some of these centers were uncertain of longer-term funding. The network

assumed greater visibility and prominence throughout the state and became a vehicle for the dissemination of state-level programs, notably for teacher upgrading and recertification. As funds grew more scarce, some teacher centers within the network found themselves competing for in-service enrollments or for the allocation of special project funds within the network.

The Arcadia Teacher Center continued to expand between 1979 and 1981. There were increases in the number of summer workshops, and special projects, in facilities and personnel, in the wealth of resources comprising the materials bank, and in membership and opening hours. The majority of activities centered on practices and products that were commercially developed, most notably the resource materials, with less recourse to R&D products, home-grown practices or knowledge resources developed at the state college. Center staff played multiple linking roles, both on behalf of participating teachers and state college staff. These roles ranged from resource transformation and delivery to solution-giving, implementation-facilitating, process helping and direct training.

Operations at the Three Rivers Center were more successful between 1979 and 1981, owing to energetic and more consistent leadership, consolidation of the basic activity format and a stronger mandate to act as "middleman" between the university and the school district. Nonetheless, there were problems of staff turnover, role overload, centrifugal administration and the near deletion of school district funds supporting teh center. Center staff also complained of goal displacement from practice-relevant projects to larger-scale workshops that were used primarily by teachers as an easy route to contract recertification and post-graduate degree credits. The knowledge base underlying center activities was predominantly home-grown and craft-validated, reflecting the teacher-to-teacher exchanges that still comprised the bulk of workshops. Knowledge use was directed less at classroom-level innovation and problem-solving than at the reinforcement of current practice, notably in areas of weakness. There was a schism between the "bag of tricks" orientation of primary school teachers and the more theoretical interest of secondary-level teachers. Linkage roles clustered principally around resource-finding and delivering, with proportionally less solution-giving and process helping and very little direct training. Gradually, the college of education took on more prominence as a source of expertise for the center.

Outcomes. The statewide network succeeded in establishing links between school districts, state colleges and state educational officials which previously had been episodic and informal. There was evidence of a resulting increase in collaborative projects and in the number of promising new practices exchanged between school districts. Also, efforts to disseminate state-level programs were accelerated by virtue of channeling them through the nine teacher centers. Institutionally, however, the network was not yet "routinized." The five new centers were still struggling. Some were not perceived to be performing core educational functions within their districts and, in some instance, competed with district-administered in-service training. The transition from soft to stable funding was likely to be problematic.

Outcomes at Arcadia were strong and positive. Teachers reported a greater number of within-building and between-building exchanges, a sense of professional "rejuvenation," changes and improvement in classroom instruction and the integration of the center into their yearly cycle of classroom preparation and problem-solving. State college staff also reported increased exchanges with colleagues and modifications in their coursework resulting from the materials-centered focus of the center and its resources. There were indications of some negative effects; center staff complained of periodic overload, less time for reading and course preparation and, in one case, of "short-changing" pre-service students by concentrating on a more time-consuming clinical approach to coursework at the expense of theory. The center became something of a centerpiece for the state college and drew statewide attention. Its institutional base was secure within the state college.

Outcomes at Three Rivers were largely positive, but at lower magnitudes than at Arcadia. Teachers reported enhanced professional status, greater within-building exchanges, modest improvements in instructional practice and wider use of what they saw as the best ideas and practices available in the district. Many of these inputs were stockpiled for later use, bringing teachers to feel that their professional capacity was greater. School district administrators put a higher priority on in-service programming and attributed the faster rate of dissemination of new programs to workshops organized at the teacher center. On the other hand, there were few effects on the college of education. Also, the institutional base of the center was insecure. The center had wide outreach but was not yet considered a core function by the majority of area teachers and administrators. District administrators' support was ambivalent and future funding uncertain. Center staff were periodically dispirited and overextended to the point of looking for other posts. The center appeared to be in little danger of closing, but had yet to achieve a continuous period of stable operations and staffing.

Causal analysis. Multiple interviewing of informants, together with the progressive focussing of probes and observations on core issues emerging at the site, yielded a set of some 50 variables that either accounted for antecedent conditions at the site or mediated important outcomes. These variables were clustered first into nine groups according to a preliminary causal model for the site. A fully elaborated causal "path diagram" containing the full set of variables was then drawn for the two teacher centers. At the most rudimentary level, the general causal model postulates that the closeness and positive nature of antecedent coupling between the university and school district prior to the creation of the arrangement determine the commitments made to the enterprise by the school district and the participating college of education. The strength of these commitments then determines the efforts of staff members in the intermediary unit. Staff efforts lead to the design and implementation of the IOA program, as defined by the diversity of objectives, variety of activities and perceived responsiveness of staff to requests or needs expressed by participating units. The number and quality of external resources, including knowledge-based resources, also influence IOA program characteristics. Program characteristics then determine IOA development,

including the extent of use by member institutions, the number and closeness of ties and the degree to which the arrangement becomes routinized. Finally, differing degrees of IOA development predict to varying levels of outcomes at the school level and at the level of the university.

I. BACKGROUND AND SCOPE OF THE LARGER STUDY

Studies of the role of the university as a "knowledge builder" and "knowledge center" abound. These are, to be sure, the traditional roles invested in institutions of higher education. Somewhat more recently, there has been interest in tracing the flow of knowledge and expertise produced by the university to its ultimate targets in the world of practice.

This concern for the linkage between universities and local schools has not abated. In fact, pressure has grown on universities to enlarge their service or "outreach" function, and to direct it more operationally toward educational practice improvement. In many cases, the institutional response of colleges of education has been that of intensifying the in-service teaching function and of providing a more formalized process of delivering consultant services to school systems requesting them. The connections made, however, have been comparatively weak, poorly elaborated and not well supported from within. There has emerged a subtle and often implicit differentiation of roles, in which the prestigious private and state institutions attend to post-graduate training and non-mission oriented research, and the local state and community colleges busy themselves with pre-service training of practitioners and, with their remaining resources, remain on call to local school districts requesting specific forms of expertise.

Correspondingly, when the federal government in recent years has attempted to support the improvement of educational practice in schools, it has largely ignored the potential role of universities, relying instead on state or local educational agencies, on semi-public agencies such as regional laboratories or on parallel mechanisms such as the National Diffusion Network.

Study Objectives

A less explored avenue of inquiry has been the instances in which universities and local school systems establish formal inter-organizational arrangements to improve educational practices. When these relationships are non-casual, continuous and directed at instrumental outcomes, there should be a measurable impact within cooperating schools. We would also hope that such interorganizational arrangements would affect participating universities, either in their instructional programs or in their capacity to provide sound and useful knowledge about educational settings.

This is an exploratory study of three such arrangements between a university or college, an intermediate agency (such as a teacher center) and a group of local schools. After a review of the several forms which such collaborative arrangements took throughout the country, three cases were selected for intensive case study analysis. The cases varied on several dimensions. The Eastern Private University case involved a large number of school districts and had a 40-year history of university school collaboration. The Midwestern State University case, which is the object of this case study, was in its third year and represented a rapidly expanded, activist arrangement. The Eastern State University case, of intermediate age, represented the efforts of a large public university to reach out to urban and suburban schools of its state. The three cases also spanned a continuum between a "corporate structure" of interorganizational arrangements (predominance of vertical ties from the university to local schools) and a "federate structure" (prevalence of horizontal ties among participating units).

Conceptual Schema

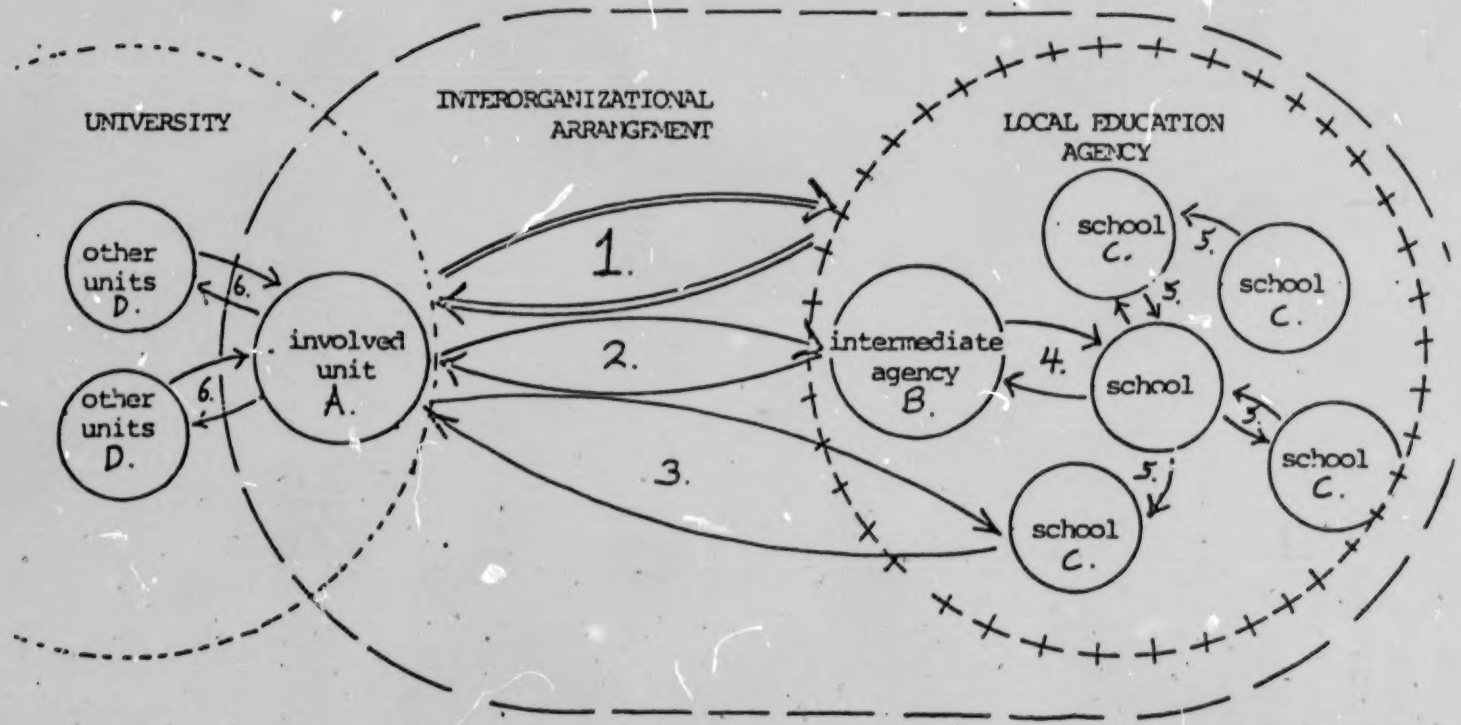
Two broad fields of inquiry oriented the formulation of research questions and the collection of data. First, these arrangements can be studied as an interorganizational network within the framework of interorganizational theory. This involves the analysis of the historical evolution of the arrangement, its environment, its interactions - notably the linking functions and boundary-spanning roles played by intermediaries between the university and local schools - and its structural determinants. The last category is especially important. Are the ties linking the units multipurpose or single purpose? Do they occur at single or multiple levels within each unit? How tightly are the units coupled? Interorganizational theory would predict that closer ties would stabilize and strengthen the interorganizational structure and thereby facilitate the flow of knowledge among the participating units. The greater the number, the variety and levels of communication, the more interdependent the individual units would become and presumably the more consequential would be the outcomes in each unit.

More analytically, interorganizational theory assumes that the flow of knowledge and other resources depends on the relative power of each unit in terms of the value of its resources to the other parties. Knowledge resource flows can thus be seen as a series of transactions or exchanges, resulting in often implicit inter-institutional bargaining and shifts in relative influence. To give an example from this case study, school district officials in one of the Midwestern sites gave over control of the choice of in-service workshops and trainers in exchange for a wider assortment of training events which the local teacher center could provide through the university.

A second conceptual framework was that of knowledge transfer theory, which views the transfer of knowledge resources between institutions as a communication process. Crucial to this process is the extent to which the system providing resources is responsive to and addresses the core problems of the user system. Knowledge transfer relationships can be descriptively mapped in four elements: the generation of knowledge in the resource system, the transfer, the utilization of the transferred knowledge inside the user system and the communication of needs, concerns and reactions from the user system back to the resource system. Knowledge can flow in both directions; not only can local schools "consume" university-level expertise, but teaching and research at the university can also be reoriented and empowered.

A map of the interorganizational linkages involving knowledge transfer between schools and universities might look like Figure I-1. The figure shows that there are at least six distinct knowledge transfer situations that need to be examined. The first is between the university-based participating unit (A) and the other members of the arrangement (surrounded by crosses in the figure). The second is between the university unit and whatever agency is acting as coordinator or gatekeeper for school participants (A-B). A third is between the university and schools directly (A-C). A fourth is between the intermediary unit (as a possible type of knowledge linker or broker) and the schools (B-C) and a fifth is among the various schools themselves. Yet

Figure I-1: Interorganizational Linkages Involving Universities and Schools



a sixth type of linkage is that between the participating unit at the university end and other units of the university such as faculties, departments, and central administration.

II. METHODOLOGY

A comparative case history approach was used in this study. Each of the three cases (Eastern Private, Eastern State and Midwestern State) followed a common analytic framework to seek out answers to the principal research questions. Each site was treated as a "case" and the brunt of the data collection effort went into getting in-depth, contextually grounded accounts of how colleges of education and local schools came to create interorganizational arrangements and how those arrangements led to the transfer and the utilization of knowledge between units that might otherwise not have occurred as rapidly or efficiently. The general research strategy called for non-participant observation, multiple interviewing and the collection of archival data in order to get a set of realiable, plausible and convergent accounts and explanations.

Sampling

As in the other cases in this study, we made an attempt to cover the interorganizational arrangement as a whole and to focus on two sub-units within it. Accordingly, we started by charting the history and present configuration of the state-level Teacher Center Network, then focussing on two teacher centers. Arcadia was chosen as the primary site for several reasons: it predated the network, the teacher center was incorporated into the college, it targeted a non-educator public along with school teachers and administrators, it was in a rural setting as were several others and it appeared to be expanding. All of these were dimensions of interest. We chose the Three Rivers center on some of the same sources of variation: its origins coincided with the birth of the network, it was physically and institutionally separate from the university, it incorporated more tenaciously the ideology of the Experimental Program, it was in an urban setting, it appeared to be stable. Also, field work at Three Rivers allowed us to observe and interview respondents at North Central University who had responsibilities both at the Three Rivers center and in the state-level network.

Within these units of analysis there was a further sampling of representative and salient events occurring in the life cycle of these arrangements. For each unit analyzed, we selected four to five such episodes, which we called "serials." There were two types of serials:

substantive serials, focussing on the organization of a workshop, special project or consultation, and organizational serials, reconstituting key incidents or structural modifications within the arrangement.

Data Collection

Data were collected over a 12-month period, chiefly through a series of site visits, totalling 16 days on site as follows:

- Arcadia = 5 days on site (2 visits)
- Three Rivers = 6 days on site (2 visits)
- State level = 5 days on site (3 visits)

The modal data collection device was retrospective interviewing of informants in each of the participating organizations. Key informants, such as the coordinators of the teacher centers, were interviewed several times (e.g., four interviews with the Three Rivers coordinator, 12 with the Arcadia coordinator). The breakdown by site and role was as follows:

Table II-1. Breakdown of Interviews by Site and Role

role \ site	Arcadia	Three Rivers	State-level Network
Teacher center staff	14*	7	8
College/university staff	5	8	-
Teachers	15	6	-
School administrators	1	3	-
Resource colleagues	-	4	1
TOTALS	35 +	28 +	9 = 72

*both informants interviewed here were also part of the Arcadia college staff

Theoretical sampling procedures were also used so as to include interviews with non-users, marginal actors, avowed critics of the arrangements, etc. Interview notes were then dictated and transcribed. Field note transcriptions totalled 410 pages.

On-site observations were also carried out. Field researcher observed training events, key meetings (of teacher center coordinators, of local policy board members) and routine operations (drop-ins and consultations). Site visits were often timed to coincide with important activity at the site. In all, 11 observations were made, broken down

as follows:

Table II-2 Breakdown of Observations by Site and Activity

Activity \ Site	Arcadia	Three Rivers	State-level Network
Operation of Teacher Center	(4)	(2)	-
Teacher Center Policy Board Meeting	-	(1)	-
Nature Study area	(1)	-	-
Coordinators meeting	-	-	(3)

A wide range of documents was collected and analyzed. Most were generated at the site itself: reports to funding agencies, proposals evaluations, newsletters, memos and minutes of meetings. Other documents were generated by researchers. These included the following: weekly activity logs over a month filled out by key role incumbents (the university dean or department head, the teacher center coordinator, permanent staff and other persons spanning units in the arrangement); reports of communications relationship using standard forms on which key actors registered at two periods in time the frequency, mode and substance of their communications with other members of the arrangement and reports written periodically by a person at the site identified as an on-site consultant, who was paid a small honorarium for periodic updates on site activity. For Three Rivers and the network as a whole, the on-site consultant also made a series of predictions of the future configuration, level of activity and degree of institutionalization of the arrangement over the following 12 months. These predictions served as a validity check on our interpretation of the data.

Documents were rich and voluminous at this site, in keeping with a philosophy of documentating, rather than evaluating, institutional events for periodic review and decision-making. In all, 65 documents were analyzed and coded.

Progressive focussing. The basic technique of data collection was that of multiple interviewing with key informants, using many of the techniques of social investigative reporting. The interviews were driven by a core set of research questions, in relation to which a set

of key issues began to emerge at each site. These issues focussed much of the energy of informants and illuminated the pattern of resource exchanges, the relative influence of key actors, the institutional strength of the relationship and other mediating variables which appeared to be systematically tied to outcomes. Interviews then focussed on these issues until the most detailed, plausible and independently confirmed account emerged. In some instances, this account was reviewed by on-site consultants for verification. Along with the "answer" to the research question at the close of data collection, analysts would list and describe the prime causal variables accounting for the outcomes being reported.

Data Analysis

This involved the coding of transcripts and documents using an elaborate coding scheme derived from the principal research questions. The coded segments were then analyzed and ordered by categories of research question. Analysis was eclectic, combining frequency counts of codes with more interpretive inferences based on the plausibility, multiple confirmation and structural corroboration of coded segments. Where findings are shaky as a result of higher leaps of inference, they are reported as such.

Adequacy of the Data Base

Sixteen days on site is a short time, particularly when three separate cases were being studied in detail. Overall, findings were consistent and reasonably exhaustive at Arcadia, due in part to the manageable proportions of the site itself. Two site informants critiqued a 20-page summary and detailed causal model (see section 7) before final write-ups were done. The last wave of interviews turned up information that was redundant and contained no discrepancies from previous accounts. It is likely that we missed some of the internecine politics within the state college which were likely to influence operations at the teacher center in the future. Aside from that, data were thin on the district administrators. Only one was interviewed in depth, another briefly. But accounts about administrators from other role incumbents were so remarkably consistent that less energy was put into reaching more.

The Three Rivers site was harder to encompass. School administrators tended to be evasive and some teachers more doctrinal than our emerging interpretation of events could support. There was conflict at this site and it clouded the internal consistency of our findings; people simply did not agree on some events and interpretations. How-

ever, most of the key research questions could be answered with confidence, more so with respect to the role of the university and the teacher center than with respect to the school district and outlying counties. Very likely, too few teachers were interviewed.

Finally, our account of the state-level network is probably accurate, with strong validity in the historical and early periods but less so in the present configuration, where nine centers throughout the state are involved. Two other coordinators (Savil, Small Schools Cooperative) were interviewed aside from those at Three Rivers and Arcadia. Findings would have been strengthened by interviews with state education officials and members of the statewide policy and advisory boards.

All names of persons, institutions and localities are fictitious.

III. CASE STUDY OF THE MIDWESTERN STATE INTERORGANIZATIONAL ARRANGEMENT (IOA)

1. HISTORY OF THE MIDWESTERN STATE INTERORGANIZATIONAL ARRANGEMENT

1.1. HISTORY OF THE STATEWIDE TEACHER CENTER NETWORK

1.1.1. Historical and Institutional Context

The statewide network was created in a moderately large, sparsely populated midwestern state. The state is wealthy; it has oil, minerals and a prodigiously fertile eastern area with large tracts of sunflowers and wheat. Its natural resources, combined with a small population, make it the third wealthiest state per capita. Ethnic backgrounds are more homogeneous here than in the coastal states. The fertility of the land, most of it undeveloped and available cheaply from grants and sales made by the railroad, attracted a large number of Scandinavian and other Northern European immigrants in the second half of the 19th century; their great-grandchildren are both influential and sensitive to their origins. For example, at one of the field sites, a small farming community (pop. 3,000) in the eastern part of the state, the Sons of Norway club is a prominent building in the town, and the club's activity is as strong, if not stronger, than that of the better known service clubs such as Rotary, Lions, or Elks.

Cultural, political, economic and geographic factors frame collectively and interactively a context for understanding the events leading to the creation of the network. With the benefit of hindsight, six contextual factors influenced local events. The factors are also meaningful in that they were continuously mentioned by informants trying to account for outcomes and relationships at the site.

Decentralization. With a small population engaged chiefly in primary economic activity (farming and mining) across a large geographic area, there is little call for centralized servicing or administration, and no large urban center to do it. Along with these features goes a political orientation which is conservative and suspicious of statewide and federal initiatives. The teacher center network came to be a reflection of this pattern; it promoted unique and loosely linked local centers with virtually no central control aside from an assembly of local delegates. These were, in fact, some of its marketing points when the center network was being proposed at the state and local levels: local initiative, local uniqueness, no pressure to standardize programs, local self-determination.

Support for education and educational infrastructure. Appeals for the professional development of teachers, with the likelihood of some

impact at the classroom level, are well received in the state. Education is a core cultural value, enjoying political support. Schools function, according to informants, in a "non-adversarial" climate; school boards tend to be supportive and non-supervisory. But school budgets are comparatively low; teachers' salaries in this, the third wealthiest state, are 45th nationally. At the post-secondary level, there is a highly developed infrastructure of two-year community and state colleges, undergirding the two major state universities. As events played out, especially in the eastern part of the state, infrastructure became a key issue. Almost all the teacher centers across the state could be linked with a local state college, thereby meeting a key objective of the project to intensify links between colleges and local schools. But the declining school-age population brought several of these colleges - and the two state universities - into conflict, as they competed for an increasingly smaller pool of high school graduates. The creation of the teacher centers partially resolved that problem. The centers organized in-service, degree-level workshops for which teachers registered at and paid the local colleges, thereby providing a new source of revenue. But some of the teacher centers within a 60-mile radius of one another soon found themselves competing for these registrations as well.

Pluralism and compromise. Respondents often said that "you have to compromise if you want to get anything done here." Tolerance for opposing points of view was also seen as an institutional necessity, and may be as much a cultural or ethnic value at this site as a straightforward strategic consideration. These factors, as nebulous as they are, surfaced continuously during interviews and observations. Some illustrations:

- rejection of ideologically driven programs; good conflict management. An important precursor of the network was an experimental teacher education program at North Central University with a strong and vocal normative core, derived from humanistic psychology and the "growth potential" movement. Program staff and graduates were quickly branded as "intolerant," "aggressive" and "arrogant," although many of their critics went along with the objectives of the program. At the Three Rivers site, the perception of ideological purism on the part of university staff made it difficult to get local support for a teacher center initially proposed by North Central University.
- relative harmony of teacher-administrator relationships. Elsewhere

in the country, the teacher center movement tends to be associated with teacher militancy. The centers seem to raise not only the professional but also the unionist consciousness of their members, leading to sharpened teacher-administrator conflict. Teacher center coordinators from Midwest were "shocked" and "appalled" by the virulence of the criticism directed against school administrators in centers which they visited on the east and west coast prior to and after founding the statewide network. The teacher centers in Midwest were to be governed collaboratively by "policy boards" with a majority of delegates named by the local branch of the NEA and other delegates from the district office, the community and local college or university. The statewide policy board had the same governance structure. Overall, judging from documents, interviews and observations, the system functioned well. Latent conflicts were quickly verbalized, then treated head-on but with a low emotional charge. There appeared to be a consensual arrangement whereby conflicts of interest led to compromise solutions rather than to polarization. These boards seldom voted. Potentially serious conflicts tended to be diffused rapidly by a round-robin of telephone calls from intermediaries. Even at sites where formal relations had broken down, e.g., contract disputes and the threat of strikes by teachers, informal contacts remained strong and unfeverish.

How this played out in terms of teacher center policy and programming is expressed well, if somewhat idealistically, by the "prime mover" of the statewide network, the dean of the college of education at North Central University:

> The approach here is different [from other states]. The centers are more eclectic and ...each is willing to encompass a range of philosophical issues. You may get a workshop on using basal readers and another that does away with basal readers. That's where the teachers are and that's where we have to start with them. It's also important to get them interested in different perspectives... I guess we're more ecumenical here.

Egalitarianism and easy access. Some respondents evoked the Scandinavian influence to explain that status differences between teachers, administrators and college or university staff were attenuated throughout the state. This made it easy, they suggested, to communicate non-defensively on the various local and state-level policy and advisory boards. Most of the senior administrators in the state educational office were viewed as "people who used to be teachers like us" (which they were),

as were the state college professors. There was no apparent pecking order observed at state-level meetings. The educational establishment seemed generally to know one another well, to have done their B.A. degree and, more uniformly still, their M.A. degree at the same colleges, and to have extra-professional relationships (sports, membership in a service organization). Basically, this meant that teacher center business could be done rapidly, informally and reliably. To cite one of the network leaders:

> Other people aren't used to a place where access to state officials is so easy. If we want to talk to the state superintendent for instruction, well, we just pick up the phone. We see these people a lot. We work with them in a number of areas. So that makes it a lot easier to start up new projects with them or to get their support for something ongoing.

These informal contacts buttressing the formal transactions were not nearly as fluid between local teachers and state superintendents, but flowed smoothly between state and district administrators and college/university staff. They also helped in conducting teacher center business. When, for example, a problem was raised at a state-level network meeting about the lack of cooperation on the part of a rural county superintendent, three people immediately responded that they had either taught to, taught with, socialized with, or thought they were distantly related to the person involved, and all volunteered to call him.

Continuity, low mobility. Respondents said that most inhabitants of the state, particularly those in education, stayed there. There seemed to be a tradition of spending some time outside the state - usually for a segment of one's training or for the first job - then returning home, almost in the medieval form of the "wandering apprenticeships" in northern Europe. Although a fair amount of staff turnover was observed at teacher center sites, much of it led to other jobs (in the district office, state college or state educational office) that could be useful to the statewide network. Citing the college of education dean again:

> There is enormous continuity [here] of the people in the administrative and political arenas having to do with education. You don't always have to start over with these people. You've brought them through a process where they understand what you are doing and have committed themselves to it and will continue to go along with it.

At this site, high continuity appears to have helped the teacher center

network over rough spots, e.g., when results were poor or funding threatened. The unspoken agreement seemed to be that the network was embryonic and would require a patient, long-term commitment on the part of the educational elite across the state, most of whom were associated direc ly or indirectly in the enterprise.

Outreach and service by universities and colleges. This last theme recurred in documents and interviews. Not only the state colleges but also the state universities emphasized their service objectives. College and university staff were actively engaged - in some cases overextended - in local committees, special projects, workshops or action research aimed at the improvement of social services. All this was over and above their teaching and administrative loads. The drafts proposing the teacher center network and its loose coordination by North Central University spoke of "a history of cooperative relationships between colleges and universities, state and local officials and the state educational association (of teachers)." The implication was

- that institutions of higher education were committed to projects involving local practice improvement,
- that they were familiar with,had a legitimate claim on in-service staff development,
- that school teachers, administrators and college staff could communicate and collaborate ("boundaries are fuzzier here between the colleges and schools; people can move easily from one to the o'her," said one professor at North Central), and
- that the universities had a special expertise as brokers or nodes of knowledge resources that would be needed in a statewide information and training network.

Perceived educational needs prior to founding. The bulk of the data suggests that the teacher center network as a whole did not meet any pressing, locally perceived need. This is probably a moot point. The original proposal spoke often and convincingly of problems to which the network was a solution: the decline in school-age pupils and corresponding low turnover rate among teachers who would need in-service training to maintain their commitment and competency; the general

threat of professional stagnation, with possible impact on pupil achievement and attitudes; the need for an acceleration in the dissemination of new practices; and the need for tighter links between colleges and local schools for improved local problem-solving. In an interview, Dean Saganne, who wrote the proposal, added that his college was deluged with requests for information and expertise, many of which could be met using local expertise whose existence wasn't widely known. At the local levels, then, resource exchanges could be multiplied and extended by means of such a central repository as a teacher center linking colleges, community specialists, teachers with special skills and external sources of information and assistance.

But documentation and interviews turned up far less urgency, or even agreement on most of these points. Teachers did not perceive themselves to be stagnating, nor were they so perceived by their local and state administration. Teachers were obliged to take 16 hours of coursework or workshops every 5 years, such that in-service was contractually enforced. There were grumblings about the limited choice of in-service offerings, about its quality (overly theoretical at the university or colleges, myopic or narrow within the school district) and availability (degree-level coursework had to be done after school hours or during the summer), but no widespread, vocal dissatisfaction. Local districts did not feel under-innovative. College staff felt that they were adequately involved with local schools, if only on a problem-by-problem basis. Staff at North Central U. said that they had doubted from the outset that the teacher center would reduce demands on them, but rather had feared an increase in such demands, which turned out to be the case.

On balance, the idea of a statewide network of professional development centers seems to have been chiefly the result of a social philosophy, ideology or deeply held commitment on the part of an energetic and charismatic leader and what were called - for the most part endearingly - his disciples throughout the state. The problems were meaningful too, but not urgent for local administrators and teachers. In some respects, the faintly doctrinaire nature of the proposal itself shone through. For instance, current in-service offerings were

judged inadequate not as the result of survey or testimonial evidence (though there would have been some) but as a result of their having been defined externally by administrators. Empirical work was then cited, somewhat inappropriately (e.g., NSF, Rand studies), to show that teachers tended to ignore or to transform externally generated practices. The implication was that teacher-identified training needs were not only the most legitimate but also the most effective inputs for program elaboration, and that the new format was needed to rationalize investments. As discussed below (see section 1.1.3), the network seems to have been driven principally by the strikingly ambitious desire to spread and concretize throughout the state, a shared philosophy of individual growth among influential and energetic educators. But we should note that antecedents were different from one local site to another. At one of the sites studied in detail (see below, section 1.2), the local center appeared to grow more "organically" from locally felt needs to which the center was an obvious answer. This center, incidentally, predated the creation of the statewide network.

1.1.2. Institutional Precursors

That the structure and objectives of the state-wide teacher center network seem to have a clear, direct institutional lineage from earlier enterprises in and around North Central University is further witness to the force of philosophical ideas in the network's founding. Five institutional or programmatic sources should be mentioned briefly.

1. The Experimental Teacher Education Program. Between 1965 and 1967, a comprehensive study of teacher education opportunities and likely needs in the state was carried out collaboratively by the State Department of Public Instruction, North Central University, the Legislative Research Council, the State Board of Higher Education, the U.S. Office of Education and a number of local school districts. It was estimated that some 60% of the state's elementary school teachers had "less than degree" certification (i.e., no B.A.) and that an emergency program should be created, externally funded and governed independently of the college of education at North Central University, where the program should be housed. The program should retain an

experimental focus; this clientele was older and more experienced than the customary pre-service or post-graduate degree students. Instruction would ideally be more practice-based, more egalitarian between staff and students and more directed to increase continued self-development capacity than to assure high levels of terminal certification.

Dr. Paul Saganne was hired from another midwestern university to direct the Experimental Program, which lasted from 1968 to 1972, conferred approximately 720 degrees (400 B.A. degrees, 300 M.Ed. and 17 Ph.D. degrees), achieved national notoriety, created a dynamic and influential social network among its graduates and sparked local controversy. Some of its staff was integrated in 1972 into the college of education, with whom relations had been uneven, and Dr. Saganne was appointed the dean of a renamed "center" which essentially assumed and extended the activities of the college.

The Experimental Program introduced practices which were radically new to the area. Staff reasoned that if teachers were expected, as this program sought, to "inculcate the spirit and the capacity for inquiry and discovery" among pupils, these practitioners should be taught as they would teach their own pupils upon graduation. As a result, there was little lecturing or other large-group instruction, no compulsory reading lists, few paper and pencil examinations and little hierarchical differentiation between students and college staff. Through independent study, small seminars and periodic "clinical" internships in schools throughout the state, students designed and executed a largely self-defined program, relying on instructors for guidance. Attempts were made to simulate real or ideal classroom environments in the college itself, with a particular interest in the materials-rich, relatively unstructured British "informal" or "open" classrooms, set up with integrated learning areas or "activity centers." The British "informal" model, with its emphasis on children's multi-modal, self-directed exploration and cognitive mastery of their environment, was a source of inspiration, and constituted the ideal by which local practices were often measured. Finally, the fluidity of movement between university and local schools, together with the injection of-for once, highly valued - craft knowledge into a university setting,

was meant to break down the perceived isolation between colleges and local communities.

The life cycle of the Experimental Program seems to have had two parts. During the first two years, the program attracted some of the most dynamic teachers and administrators throughout the state. Most were enrolled in the M.Ed. and Ph.D programs, where they formed a cohesive, highly committed reference group. They were young, but experienced, in that all had done at least five years of classroom teaching and most had moved into administrative slots at the building and district levels. Some of the Ph.D candidates were instructors at the various state colleges sprinkled throughout the state. Indications are that this group thrived on the independent, experiential nature of the program and internalized its philosophical core. Most returned to their home schools, school district offices and state colleges with a strong commitment to furthering "informal" education. It was around this group that the state-wide teacher center network was built.

The second phase of the Experimental Program was apparently less successful, at least in the eyes of teachers and administrators within a 60-mile radius of North Central. The new cohort enrolled in the post-graduate program was less experienced, containing a greater number of out-of-state students and more militant than the first group. During their internships in state schools, they were variously perceived as arrogant, fanatical and naive. Experimental Program students tended to denigrate local practices by reference to the more idealized and child-centered "informal" model; local practitioners took this to mean that they themselves were insensitive to childrens' needs and ineffective teachers. Feelings ran particularly strong in Three Rivers, where North Central University was located. Below are two representative remarks, first from an informant who had done the Experimental Program and then stayed at North Central as a graduate teaching assistant, then from a local principal:

> Teachers and principals heard the Experimental Program students saying that their schools weren't adequate, and a lot of those students weren't very experienced. Then when people started coming in

> from all over the country, it made it seem as if the university people were right; it made things worse. Also, very few of the new students (in the second phase) who were doing the M.Ed. or doctorate came from Three Rivers.
>
> A lot of people got burned by the real missionary nature of the training over at the University (during this period). It was messianic; it put a lot of people off.

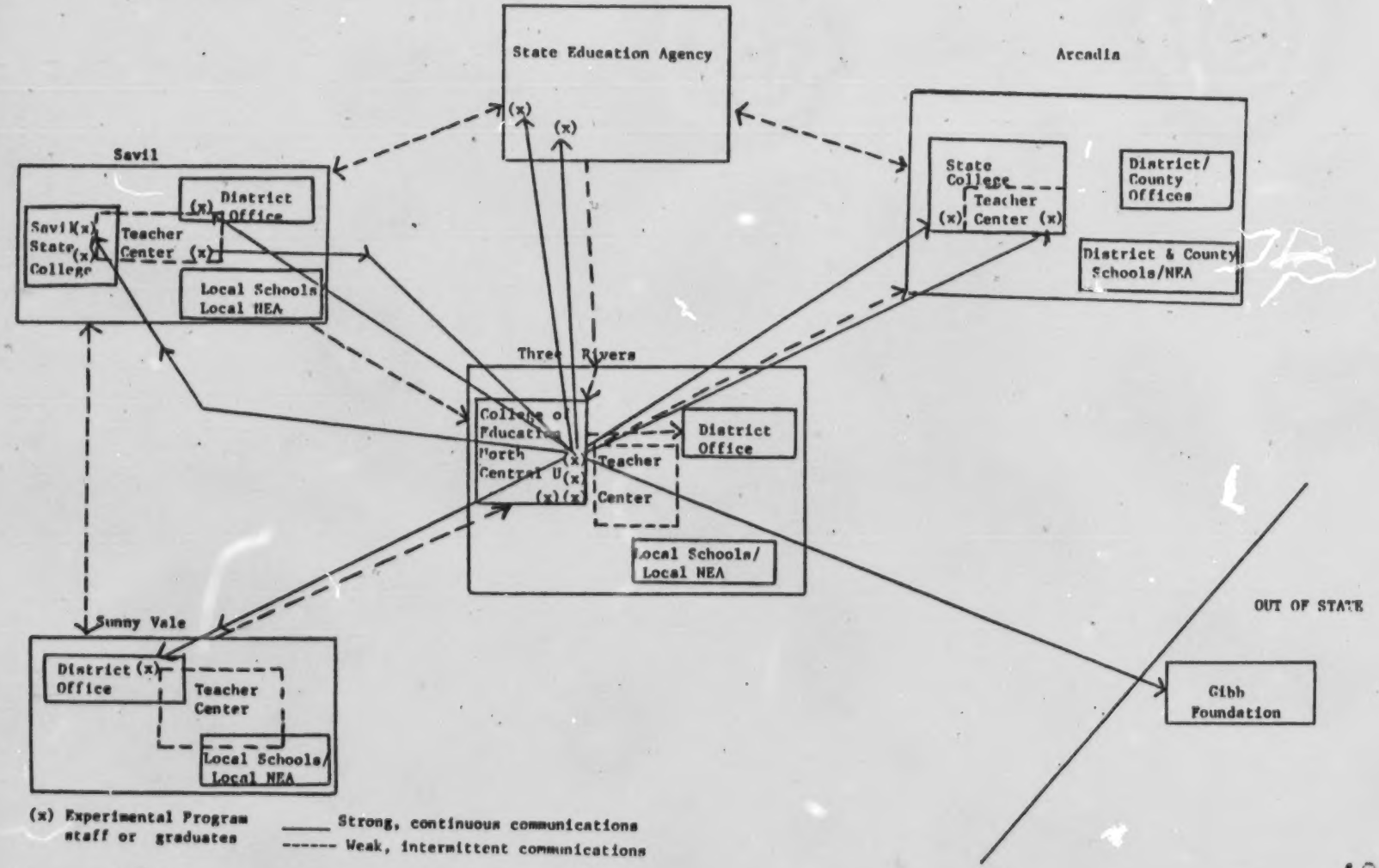
Several informants said that there was already some "rivalry,""bad blood" or "ill will" between North Central and local educators prior to the New Program, but that relations deteriorated further between 1970 and 1972. Many of the difficulties in founding and maintaining the teacher center in Three Rivers were traced by site informants to the distrust with regard to the university stemming from the Experimental Program.

2. The social network of Experimental Program graduates and their local insertion. Graduates moved into key administrative positions at the district and state levels, and into teaching and administrative (e.g., dean or director of a program) slots at state colleges. They had occasion to meet on state-level business or during conventions, and stayed in contact with North Central staff who found positions at the college of education when the experimental program was phased out. When Dean Saganne began prospecting throughout the state for the creation of a network of local teacher centers, he began by contacting this corps of graduates.

Figure 1-1 maps the relationships between North Central staff, in particular Dean Saganne, and the 4 districts in which teacher centers were created in the fall of 1977. The "nesting" of the teacher center varied from district to district and may account for differences in outcomes among these four centers. The (x) denotes North Central staff and Experimental Program graduates.

At Savil, there were graduates in the state college and the superintendent's office; the teacher coordinator was also a graduate. Note that the state college intersects with the teacher center. The

Figure 1-1 Influence and Relationship Networks at the Time of Creation of State-Level Teacher Center Network



college provided space, some financial aid and overt support to the center. Although this site was not studied in detail, there is evidence that the state college still claims partial "ownership" of the center and provides it with resources.

At Sunny Vale, the graduate was in the district office; there is no state college in the area. The center was housed in a local school and, until 1980-81, coordinated by a local teacher who then moved into the district office.

At Arcadia, the graduates were both at the state college; one of them was teacher center coordinator, operating out of the college. The other was a department chairman.

At Three Rivers, there were no graduates in the district office. The center was not "claimed" by any of the parties, although the district provides it with space adjacent to the city library.

The arrows show communication patterns in the three years prior to the creation of the network. Dean Saganne at North Central was clearly at the hub of most communications. He initiated most contacts, and received intermittent communications from the districts. Within local sites, the graduates got together to plan the center; in most cases, this involved lining up support and getting a facility for the center. The graduates communicated intermittently with other graduates in neighboring districts and with graduates in the state office of education. Note finally that Saganne has strong links where others have weak links or none at all - to the state education office and to the private foundation which eventually funded the project for about half of the total costs incurred in the first five years.

Informants estimated that local centers were harder to get off the ground where there was no Experimental Program graduate in a key slot. They were also surprised in one case where graduates were strategically placed but a center not created in the first two years of the network.

3. Midwest Study Group. During the Experimental Program, a national study group of educators and researchers was created. The group met once yearly communicated via a newsletter and ran a publications series for monographs written by its members. The group, which continued after 1973, fostered an approach to schooling, testing

and research which was close to that of the Experimental Program. In particular, its members experimented with alternative forms of testing and program evaluation. Some of the members had visited British informal schools and the regional teacher centers which had been created in part as a resource bank for these schools. One member had created such a center within an urban university on the east coast. Much of the initial input to Dean Saganne (and to another staff member who coordinated the study group's activities and later coordinated the network itself) about teacher centers came from this source.

4. Federal projects. In 1971, the U.S. Office of Education was exploring the creation of regional "resource bases" throughout the country. There was talk of state-level resource centers partly funded by the government. In Midwest, the concept was poorly received; the notion of a centralized materials and staff development center went against the grain of decentralizing operations and resources throughout the state. Dean Saganne addressed this issue by writing a paper in which he outlined an in-service strategy for the state. The strategy turned around the creation of local resource centers coordinated through a university or a network of colleges and universities. When the Nixon administration laid aside such large-scale federal initiatives, the Midwest project lay dormant until 1975, when Saganne reformulated it more operationally in proposing a state-wide network of teacher centers coordinated by North Central University.

5. NIE-funded research project. Dean Saganne and his staff applied for and got an NIE grant to study the dissemination and impact of the Experimental Program throughout the state. The grant began in 1972 and was extended to 1976, during which time the focus of the research shifted. Initially, the study tried to evaluate local classrooms on outcomes sought by the Experimental Program: pupils' affective and cognitive growth, "quality of interpersonal relationships," "levels of critical thinking and creative expression." Gradually, the focus shifted to dimensions of the classroom environment (e.g.,"openness") and to teachers' experience with more child-centered classroom organization. In the final two years, some of the instrumentation (interviews with

teachers, children and parents) was converted to a self-evaluative format for teachers, as a way of reflecting on and changing their practice. A staff development workbook was elaborated, in which teachers found interview schedules, exercises, log forms and inspirational citations, many of them from humanistic and gestalt psychologists (e.g., Carl Rogers) and similarly-oriented educators (e.g., A. Combs, G. Leonard, E. Duckworth). The workbook was organized around what were called "components of growth" (awareness and reflection, trust, risk-taking, etc.). The self-evaluations centered on seven dimensions of instructional practice: diversification, individualization, informality, decentralization, integration, use of the community as a resource, peer interaction (chiefly among pupils).

The workbook came to be used in coursework, workshops and special projects undertaken by staff at North Central University. For some informants, this project was a precursor to the teacher center network in that it stressed "teachers as learners in the context of staff development." To cite from the report to NIE:

> Using and talking about the workbook helped teachers to understand their own experience and how it influenced their behavior...The project led to an interest in creating forums for continuous discussion between teachers, a continuous reflection on their practice.

1.1.3. Philosophical and Ideological Roots

These intellectual origins have already been traced to the Experimental Program, the Midwest study group and the NIE-sponsored study of staff development. An additional source, feeding into these initiatives, was that of the U.S. Office of Education-funded Teachers' Center Exchange in the Far West Laboratory for Research and Development. Globally, the overriding thesis was that teachers are adults who are capable of making significant personal and professional changes, provided the surrounding environment is supportive. Many of these changes, it was felt, would go spontaneously in the direction of greater individualization of classroom instruction, a more integrated curriculum, less hierarchical relationships between teachers and their pupils and more "active" (self-generated, exploratory, experimental) cognitive

mastery on the part of pupils. It was also assumed that individual change would lead to institutional change within the school building and district towards a more dynamic and interpersonally harmonious working climate.

These beliefs, as expressed in the preliminary proposals, minutes of meetings and field notes of interviews, can be subdivided into five key "messages" or "assumptions":

1. Like all adults, teachers are potentially self-actualizing and self-directing individuals. If given the opportunity to organize their own staff development needs, they will be judicious and responsible. As a result, teachers should determine the teacher center program and constitute a majority in its decision-making council.

2. Teachers can be "trusted." In asking for workshops, special projects and support and in directing teacher center policy more generally, the needs of teachers will correspond to locally perceived needs. Teachers' self-interest will intersect with principals' and superintendents' interests. The center will not become a seedbed of teacher militancy.

3. Teacher-defined professional development will lead to practice improvement. More generally, teachers will take greater responsibility for curriculum and instructional decisions without coming into conflict with local administrators.

4. No one source or type of knowledge or expertise is superior to others. University expertise is neither more valid nor more powerful than craft knowledge; it is other. Ultimately, what you don't know can't help you, and you know much more than you believe. The richest source of external knowledge is likely to be fellow teachers.

5. As they interact with practitioners, colleges and universities will come to recognize the validity of craft knowledge and incorporate it into their instruction and research.

In many ways, most of these assumptions - which were implicitly translated into teacher center objectives - are a transposition of what the Experimental Program sought to instill in its graduates as they worked in or administered classrooms. If, in the previous list, "teacher" is replaced by "children" or "pupils," we have the core

set of objectives for the Experimental Program.

1.1.4. Historical Persons or References, Key Actors in the Creation of the Network

This section has to be looked at at two levels, the state-wide level and the level of individual teacher centers. At the state-wide level, the most prominent figure is Paul Saganne, Dean of the college of education at North Central. All the remaining actors at the site appear to be a supporting cast. Saganne first outlined a teacher center model in 1971, then pushed more energetically for its creation starting in 1974. He set up the local committee at Three Rivers, then created the group which founded the other three centers. He appears to have lobbied for support successfully at the state educational office and, through graduates of the Experimental Program, in district offices and state colleges. He wrote the proposal and brought in the bulk of initial funds. Almost all of the preliminary reports, proposals, key memos, etc. seem to have been written by Saganne.

At the local levels, there were several key actors (see Figure 1-1). At Savil, the center was the collective work of its first coordinator, Belinda Herman, of the local superintendent, Harris Livermore, and of 2 professors at Savil State College, John Zubba and Dan Syl. At Arcadia, the center grew out of efforts to improve pre-service teacher education on the part of Don Lessing, with administrative and financial backstopping from the department chairman, Robert Goff. All these people were graduates of the Experimental Program, as were two supportive state-level administrators, Harold Fine and Peter Handlin, and an influential "lobbyist" at the state capital, Hilary Hanson, head of the state's Council of School Administrators. All served on the state-wide network's advisory board.

At Three Rivers, the two assistant superintendents, Peter Blake and Hal Jensen, backed the project while harboring doubts. Final negotiations were handled skillfully by a faculty member at North Central, Joseph Harrison, who then served on the local policy board alongside Saganne.

1.1.5. Historical Event Listing

Table 1-1 shows the sequence of key events in the founding of

Table 1-1 Event Listing for Founding of State-Level Teacher Center Network and Local Teacher Centers

North Central University Statewide activity	1965-8: State study of teacher education needs * 5/68: Exper. program opens, Saganne named director 6/73: Exper. program merged with college of ed., Saganne named dean 1970: USOE proposes regional "renewal" centers 6/71: Saganne writes paper proposing teacher center concept for regional centers *6/72: North Central awarded 4-yr NIE grant to evaluate Exper.program	1974-5: informal meetings between NCU, local NEA, administrators *1974: initial interest signaled by Gibb Fndation *1974-75:NIE study focusses on staff development needs	2-6/76: meetings across the state to discuss,plan network *9/76: initial commitments made by SEA, NDEA, state colleges and LEAs 3/76: publication of staff development workbook	11/76: Proposal submitted to Gibb Foundation 2/77: Foundation makes site visits *4/77: funding approved 5-6/77: visits, meetings at other teacher centers in U.S. *9/77: 4 centers open at Arcadia, Three Rivers, Savil and Sunny Vale
Arcadia Teacher Center	9/69: B.Goff appointed as head of psych. and ed. dept. of Arcadia State College *9/70: D. Lessing hired as assistant professor 1972-4: Lessing begins experiments with materials-based instruction	*9/75: Lessing moves into cafeteria space 1/76: special project enriches resource bank 6/76:start of Lessing involvement in 2-yr,in-svce for non-degree teachers	9/76: special ed. in-service program leads to cross-college collaboration *9/76: first in-service workshops organized, lending of materials expanded 10/76: first contacts w/ Saganne re state-level network	7-8/77: first summer in-service held using project format *9/77: teacher center joins state-level network
Three Rivers Teacher Center	1968-72: local ambivalence about N. Central Experimental Program 1973-4: informal discussions at local teachers ass'n about teacher centers in other states Antecedent events 1965-73	1974-5: informal meetings continue teachers skeptical *1975-6: Carlson replaces Saganne, teachers give backing Catalytic and Planning events 1974-76	9/76-3/77: start of detailed planning; commitments firmed up from NCU, district administrators Concretization and Commitment 2/76-3/77	1/77: presentation to local teachers ass'n -still undecided *4/77: new presentation (external funding received)-approval 5/77: presentation to school bd-approval of majority *9/77: teacher center opens Founding events Nov. 1976-Sept. 1977

* key or "barometric" events

the network. Decisive or "barometric" events have an asterisk. For this section, only the events concerning North Central University and state wide activity are pertinent. Events at the local centers are discussed below (see section 2).

The time span is from 1965 to 9/1977, as the legend shows. Three strands of antecedent events are listed. The first covers the genesis, operation and ultimate merger of the Experimental Program with the college of education. The second strand covers the evolution of the teacher center concept in the state. The final strand is the NIE-sponsored study which tracked Experimental Program graduates.

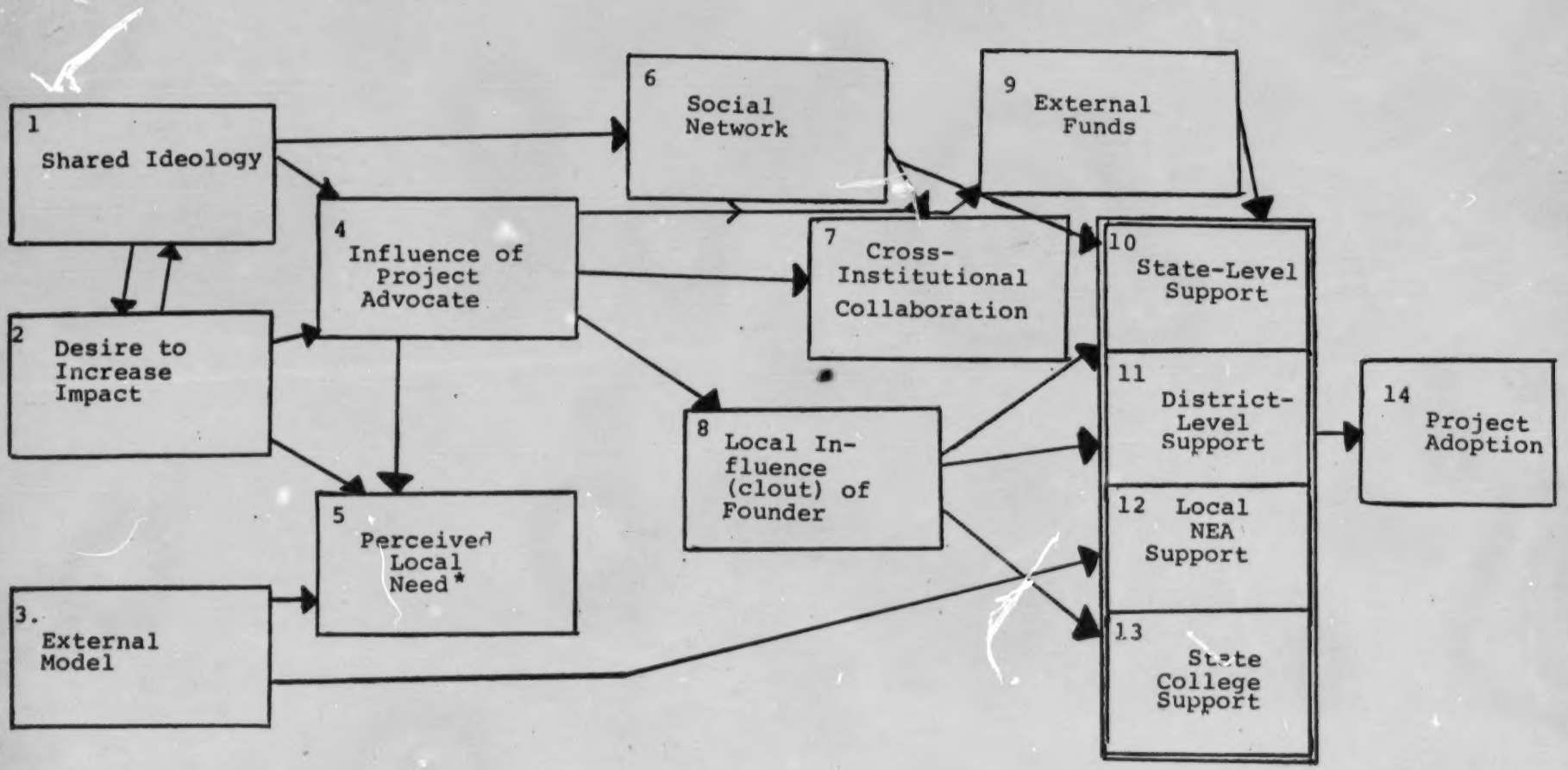
In the second phase, charting catalytic and planning event, three event clusters are noted. Meetings at Three Rivers began, initiated by Dean Saganne and including delegates from the local NEA branch and the district office. When it was decided, largely at the initiative of Saganne, that the project be state-wide rather than uniquely local, the same format of delegates was created at other sites in the state. Also during this period, the Gibb Foundation let Dr. Saganne know that a state-wide project could be funded. Finally, the NIE study was focussed more closely on teacher professional development, culminating in the next phase in the staff development workbook.

The final two phases cover events leading to local commitment (approval of the project, small sums pledged by the state NEA, the local districts, the state education office, the colleges and universities near local centers), including the approval of the proposal by the Gibb Foundation, which gave approximately $400,000.00 over five years.

1.1.6. Schematic Flow Model of the Founding of the Network

Figure 1-2 plots, at a macro-analytic level, the key variables in the creation of the state-level network. As antecedents, the Experimental Program's heritage was reflected in the shared ideology (1) and the desire to extend child-centered instruction (2) on the part of the program's graduates. Within the state, educators had read about teacher centers and found the concept attractive (3). The activity of the project advocate, Dr. Saganne (4), in proposing the teacher center model and mobilizing administrators and teachers' groups, was

Figure 1-2 Key Antecedent and Process Variables Leading to Founding of Network



* might also be "perception of local inadequacy"

Note: some of the contextual variables (decentralization, compromise, egalitarianism, etc.) might be added as antecedent variables

enhanced by local support, such that the informal groups meeting to discuss the concept came to see its importance and potential (5). This social network (6) of graduates concretized support at the three levels (university, school district administrators and teachers) and between groups meeting at different points in the state (7). Through the social network of graduates and using their influence as state and district administrators (8), firm support was generated at all levels (10). The backing for the concept was made far stronger when the project advocate succeeded in getting external funding (9), after which the 4 centers and statewide governance mechanisms were created (10).

1.2. HISTORY OF THE ARCADIA TEACHER CENTER

1.2.1. Historical and Institutional Context

Arcadia is a small (population: 3,000) rural community in the fertile Red River Valley. From respondents' accounts, the community is wealthy, with a half-dozen millionaires and a high mean income from the large sunflower and wheat tracts surrounding the town. The townspeople are chiefly of Scandinavian origin, notably Norwegian.

Arcadia is also a college town. Arcadia State College lies on a shaded campus near the town center. It enrolls approximately 650 students, of whom about 60% are future school teachers. Virtually every department in the college instructs teacher education candidates, with some specialization according to the grade level which future teachers will work in, e.g., the social studies department enrolls secondary-level teachers.

As a state college, Arcadia ministers to the surrounding community, viewing itself as a "school of personal service." Although its prime function is pre-service training, the staff is active in the surrounding communities as consultants, members of local committees and workshop leaders. Outreach and service are considered prime objectives at Arcadia State. The teaching staff is expected to focus on instruction and outreach; publications and research activity have a lower priority. By way of reciprocity, the community appears to support the state college and take pride in it. While both state universities are

within a 90-minute driving distance, as is another state college, most families in the area send their children to Arcadia State. Such fidelity has become an important factor in recent years, as the pool of high school students diminishes and the colleges find themselves in open competition with one another. This is particularly the case for teacher education majors, who can choose among 3 nearby institutions aside from Arcadia State.

One other contextual factor is noteworthy. Unlike the second local site studied in Midwest, Arcadia has few ongoing educational or cultural resources for the area's inhabitants. Until recently, in-service teachers could not count on a well-stocked materials center or a rich fare of workshops. As all teachers have had to meet recertification requirements by accumulating course and workshop hours, the local practice was to wait for the Arcadia State summer school program or commute to the larger cities for their summer semester.

1.2.2. Institutional Precursors

The Arcadia Teacher Center has an easily traceable lineage. All the key events antecedent to the center's founding took place within Arcadia State College and involved two main actors, Don Lessing and Robert Goff. There are four sets of institutional events: the institutional roles played by Lessing and Goff, the reorganization of Lessing's teaching, Lessing's management of a series of special projects and the Arcadia State summer program.

The heritage of the Experimental Program. Having completed his doctorate under the Experimental Program, Goff returned to Arcadia State in 1969 and took on the chairmanship of the Psychology and Education Department. The following year, he brought in Lessing who, like himself, had been a teacher and building administrator before doing his doctorate under the Experimental Program. Both felt that the Experimental Program had been personally rewarding and were committed to its objectives of attaining a more child-centered, individualized mode of classroom instruction within the state schools. Both also saw the Experimental Program as a model for their own teaching as well as for the B.A. program at Arcadia State. Lessing said that his B.A. and M.A. were disappointing, in that coursework was rigidly organized and

far removed from educational practice. At the Experimental Program, by contrast:

> For the first time I could decide what I wanted to do and follow through on it. I don't think I ever did so much reading and looked into so many things as I did in those years.

Another noteworthy aspect of the program for Lessing was the individual attention given to the doctoral students. The university staff spent a good deal of time monitoring the independent projects of students:

> They sat down and spent time with us as individuals; they cared. I really got a lot from that and I wanted to try to create that kind of environment too.

Several informants made precisely this kind of statement about the Arcadia Teacher Center. Teachers came into or called the center "because they care about you," "because they treat you like professionals," "because you can really tell them what your problem is and they'll try to help."

Reorganization of teaching. Lessing used a regular college classroom for his "teaching strategies" course to elementary education majors, but soon felt that a lecture-seminar format was overly constricted and too far removed from an ordinary classroom setting. He then began to bring in materials (kits, games), to set up integrated curriculum displays ("activity centers," a widely used device in British "informal" schools) and, soon after, to bring in children for hands-on work by students based on these materials. Other staff members began complaining of the clutter and noise. The last straw was a giant plastic bubble which Lessing and his students set up in the classroom for work on perception. As Lessing said,"I was looking to leave anyway."

With help from Goff, he was given an unused cafeteria in the basement of the main campus building. Work-study students helped Lessing to repaint, retile and set up the new space. One corner of the space (75' by 75') was set up as a classroom, and the remainder made into storage and bookshelf space for the rapidly accumulating projects of materials and equipment. As students began to do individual projects for the "strategies" course, the resource bank was enriched with teacher-made materials as well as with commercial materials. As furniture was bought or, more often, scrounged from around the college and from

student's quarters, social spaces were created, with rugs, indirect lighting, comfortable chairs and provisions for coffee, listening to music, reading popular journals, chatting. The informal, intimacy-enhancing character of the main room spread to the furnishings of adjacent rooms as more space was made available to accommodate the new programs (see below).

Special projects. Between 1975-76 and the fall of 1977, when Lessing joined the state-wide teacher center network, a series of projects were initiated which brought Lessing into a more active in-service education role. Most of these projects appear to have been scouted and retrieved by Goff. Up to this point, the creation of the resource center in the cafeteria had been a response to pre-service needs. During interviews, both Lessing and Goff emphasized that the teacher center grew out of the pre-service program, where the strongest institutional commitment still lies. Many of the subsequent in-service formats were also built around the improvement of pre-service instruction, e.g., the arrangement whereby local teachers brought their pupils to the center for two weeks of clinical hands-on work by pre-service students. The creation of an in-service program was viewed as "a follow-up to our commitment to these teachers from the time they were students here."

Water diversion project. In 1976, Lessing was asked to help organize and provide materials for an in-service project involving curriculum segments that would be used in schools to explain a major water diversion project in the area. Goff coordinated the project and the bulk of instruction was given by Dr. Sampson, a biology professor. The project brought in funds for buying more materials for the resource center.

Non-degree program. The same year, Lessing took on greater institutional responsibility for a two-year certification program for teachers who did not have a B.A. Goff had championed the program, which some of the neighboring universities (e.g., North Central) had declined. Again, the external funding allowed Lessing to purchase materials and equipment, much of it appropriate to the classrooms of non-degree teachers. This was his first large-scale experience with in-service training. Interviews with graduates of that program were instructive. Apparently, the course included games, simulations, activity centers and other classroom formats used widely in the Experimental Program. Participating teachers did not

perceive, however, that a particular ideology or sectarian approach was being forced on them. From all accounts, the program was successful and led to routine use of the resource center when it was formally established by Arcadia State graduates teaching in the area schools. A citation here is useful:

> He knew he couldn't lecture to us and that he'd have to do a lot of hands-on work with experienced people like us, so he used projects and lots of materials - the kinds of things we liked and we were already using and that were very practical.

Special education program. Lessing undertook the coordination of another project to train teachers of special education classes in approaches to mainstreaming. Two consultants were brought in to develop and teach the program at the resource center. Three points are noteworthy here. First, the resource center played an organizing-coordinating role, going beyond its original function as a resource for Lessing's own teaching. Next, this program involved the collaboration of other staff members within and outside the elementary education department. Finally, teachers participating in this and the non-degree program began to borrow materials from the center for course work and for follow-up classroom instruction. From this grew the lending service of the center, which rapidly expanded to include area teachers who were not enrolled in a special program but were eager to borrow the resource center's materials.

In writing the proposal for this program, Lessing first used the term "teacher center" as the locus of program instruction and administration.

Summer program. In the summer of 1977, Lessing participated in an eight-week summer program for teachers seeking recertification credits. He taught workshops on social studies, math and science. Teachers were required to design a personal project, to make or borrow materials from the center and to submit a report on classroom use of the project, including work samples, to Lessing. This was the genesis of the highly successful one-week summer in-service workshops which became one of the staples of the teacher center.

Institutional flexibility. A contextual variable is pertinent here. Both Goff and Lessing insisted that these special programs,

along with the purchase of materials and equipment for the resource center, could not have been approved or put in place rapidly in a larger, more centralized institution. Most arrangements were made after a short phone call - often to the college president - or meeting, with a brief follow-up memo. Authorizations came very rapidly or were given verbally.

1.2.3. Philosophical and Ideological Roots.

There are two major sources: the Experimental Program and the objectives of Arcadia State. The first source has been touched on earlier. Graduate students brought to and/or received from the Experimental Program a commitment to the expansion of a more child-centered, diverse and integrated mode of classroom organization. The program also treated its students as self-motivating professionals who could devise and execute their own training with the help of supportive staff, a formula carried over into the organization of the Arcadia Teacher Center. The Experimental Program also stressed a diversification of sources of expertise beyond certified expertise to sources in the community and among peers. In relation to this policy, it also emphasized service and outreach on the part of colleges and universities to area teachers. Both Lessing and Goff mentioned these aspects of the Experimental Program in accounting for the shape of the Arcadia Teacher Center.

More anecdotally, some informants said that Lessing was viewed with some suspicion when he first came to Arcadia State and began to advocate "different ways to organize teaching' that area teachers had associated with the Experimental Program and believed to be "a little extreme" or "maybe a little doctrinaire." Apparently, Lessing's teaching was rapidly seen as catholic and credible; "he was a good instructor, he got along with people and we didn't ever feel he was peddling some doctrine."

Arcadia State objectives intersected with those of the Experimental Program in stressing the importance of outreach and service to the surrounding community. The college also encouraged personal, individualized contacts between faculty and students in the pre-service programs.

At a more personal level, Lessing appears to have seen his work as a social mission. Before creating the teacher center, he had traveled

around the state and seen "a number of classrooms and schools that were really repressive places":

> I saw a lot of teachers who needed help but weren't getting it, and teachers who would break down and cry at the least encouragement. It was so important to them just to hear they were doing well.... So I wanted to do some work that could help teachers with materials and new ideas and getting some recognition from college people and other teachers that they couldn't get otherwise.

Finally, there are indications that Lessing's approach to staff development had been less self-consciously egalitarian than the practices of the Experimental Program or at the Three Rivers Teachers Center. There was less emphasis on the absolute value of exchanges between practitioners. The Arcadia Center did fewer workshops with the teachers-teaching-teachers formula and stressed this objective less. The choice of summer workshops was made in some instances by teacher center staff (e.g., energy, nature studies) rather than entirely by needs assessment. Perhaps because these programs were run directly out of a college, in contrast to the Three Rivers center (see below), the formats were more structured and the demands on participating teachers more explicit. Also, Lessing had in the past and sometimes during field visits referred to himself as "director" of the teacher center rather than the "coordinator" as others were called. In general, the legacy of the Experimental Program was strongly, sometimes self-consciously egalitarian and affected the state-wide network. Assistants were called "colleagues," directors were "coordinators," university staff were the same sort of "resource people" as local school teachers. Policy groups "reached consensus." Status or hierarchical relationships were blurred, although they were operative at several points in the history of the network, e.g., in obtaining authorizations, getting external funding, gaining access to key state officials. The line of authority was clearer at Arcadia State, although, as noted in the introductory section, egalitarianism is a strong cultural norm in this region. (It is suggested in the analytical section of this case study that a one- or two-person, non-diffuse mode of decision-making lent coherence and energy to the Arcadia center, by comparison with the

more centrifugal and multi-party governance which appeared often to weaken the Three Rivers center).

1.2.4. Historical Persons

The two chief actors were Goff and Lessing. Both referred periodically to the influence of faculty of the Experimental Program, notably Saganne and another professor, C.Dix. Goff and Lessing were personal friends and worked closely in developing the teacher center at Arcadia. There was apparently a division of labor. While Lessing oversaw the teaching and program development, Goff took care of funding, administration, relations with the college president and the identification of special programs which the center could apply for. He appears to have been, from the start, a masterful fund-raiser. He brought in, for example, $15,000.00 in 1976 to the resource room for the purchase of materials under a Title I program of community assistance for which "teacher centers" could apply. At this stage, the in-service activity of Lessing was embryonic, and the resource center little more than a collection of materials for pre-service instruction.

1.2.5. Historical Event Listing

The key events for Arcadia are listed in the middle row of Table 1-1. The sequence moves from the chairmanship of Goff and the arrival of Lessing at Arcadia State to the extension of Lessing's teaching to a materials-centered format, the special programs and the first contacts late in 1976 with Saganne in reference to the state-wide network.

Apparently, both Lessing and Goff had some initial doubts about the state-wide network, although they were interested in working with Saganne and in "being in touch with people doing the same kind of work." They were also interested in the possibilities opened up for the purchase of new materials with the Gibb Foundation contribution of $15,000.00 in the initial two years, then $6,000.00 in the following two years. Since Lessing's salary and that of work-study assistants could be covered largely from state college funds, the budget available for materials was considerable. Also, the college should have little trouble in

picking up the operating budget of the center when external funding dropped to $6,000.00 in the third and fourth year, then to $2,000.00 in the final year.

Lessing, however, felt that the formula he had evolved at Arcadia State was being claimed and propagated by North Central University. He was not familiar with the teacher center literature nor the professional development movement arising from the "informal schools" experience in England. Lessing also had some fears that other potential members of the network in proximity to Arcadia would use the in-service opportunities to recruit enrolling teachers away from Arcadia State. Goff wondered whether Arcadia State could underwrite a project in which district and county teachers would dominate the governance structure: "I shouldn't have been worried; it didn't happen." On the other side, Saganne was interested in recruiting Arcadia State both for its talent and because a center which was already operational would strengthen the proposal to the Gibb Foundation.

The sequence of events is shown as a flow chart of key variables in Figure 1-3. The antecedents include the Experimental Program heritage of local activism (1) stemming from a normative core (2). Convergence between Experimental Program objectives and the service-outreach mandate of Arcadia State (3) facilitated within-college support (5), leading to expanded space and budget for purchasing materials (8). These events were themselves facilitated by the rapid and flexible mechanisms for making decisions at a small state college. Following the top row, Lessing's desire to operationalize his teaching with hands-on work and to show how "active" learning could be organized locally (1) led to the perceived need (4) for a different kind of instructional space at Arcadia State. This concern, along with internal support in the college (5), fueled his initiatives (7) and led to the creation of a large and increasingly well-stocked resource room (8). Growth of resources made the center a likely candidate to take on special in-service training programs (11) which brought in external funds (9) that were used for the purchase of more materials and equipment. The availability of these materials attracted local practitioners (12) who were not formally enrolled in a program and were excited to find a materials-rich resource center in an area in which local budgets did not permit them to make large-scale orders of instructional

materials (10). This increased the pressure of local demand (12) for the center's services, which were then extended to include a provision for lending materials and for follow-up work in local classrooms (13). As the resource center moved more actively into in-service education, it became a centerpiece for the proposed state-level teacher center network (14).

1.3. HISTORY OF THE THREE RIVERS TEACHER CENTER

As Three Rivers was a secondary site for data collection, it will be treated in less detail.

1.3.1 Historical and Institutional Context

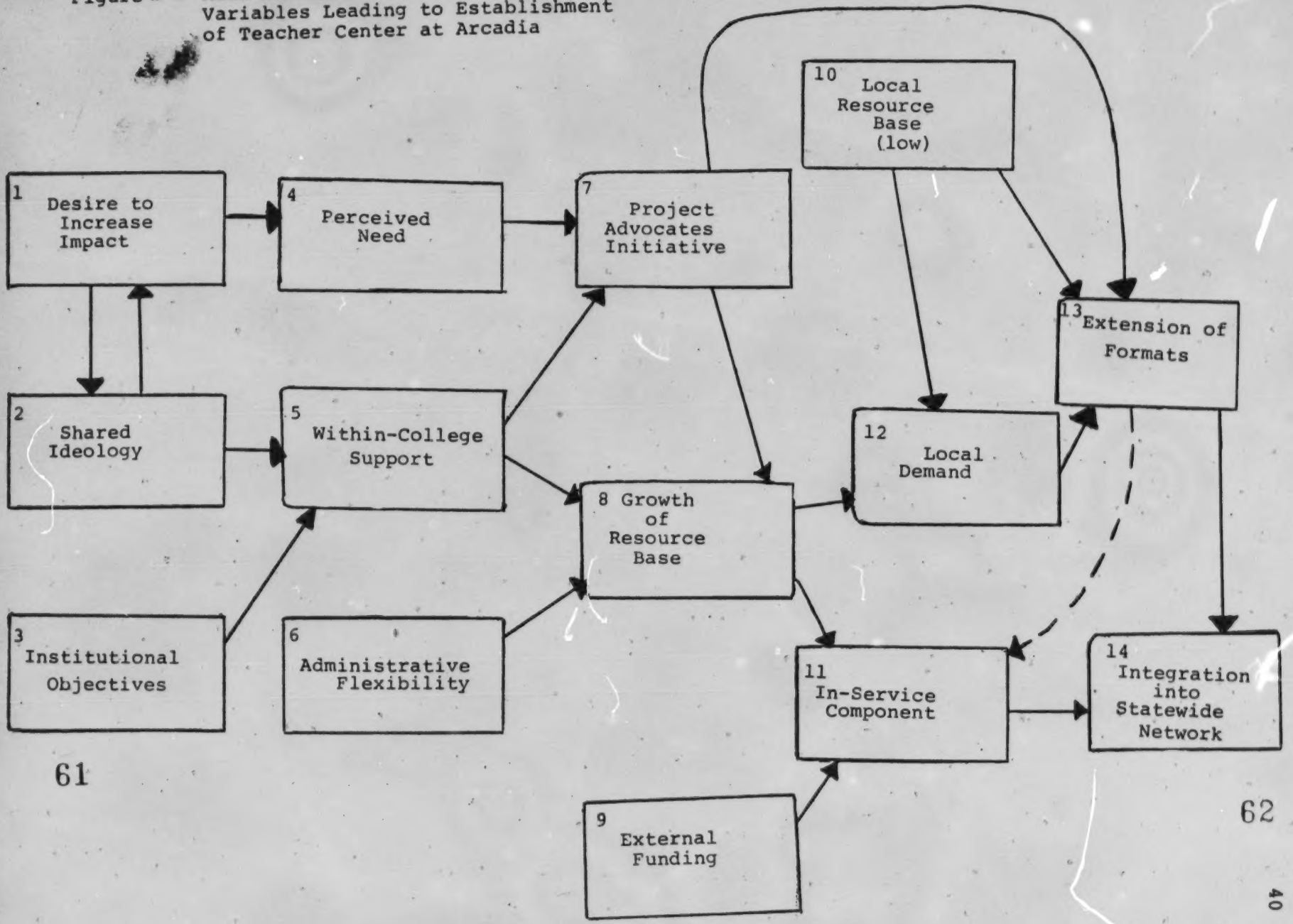
Three Rivers is one of the three major cities in the state and is often associated in the minds of residents from other areas as the locus of the larger of the two state universities. The city also contains on its perimeter a large air force base.

Because it is not a large city (pop. 45,000), local school practitioners and university people know one another reasonably well, but do not have as many non-professional contacts as at Arcadia. A large number of the university staff appear to have wives or husbands who teach school. University staff are also active in the community, e.g., serving on the school board.

Despite these multiple links, there are indications that town-gown relations are uneven, at least in the education sector. This heritage appears to have slowed down the creation of the Three Rivers Teacher Center and contributed to its initial difficulties. Some respondents spoke of "mutual distrust," others of "enmity" and one or two of "bad blood." Some excerpts from interviews:

> Teachers just feel put down by university people, so they don't want to get you involved with them.
>
> The perception of the university was that it was a very different environment from the schools and wouldn't be able to respond to teachers' needs.
>
> Each one (the university and district schools) has its domain and doesn't want the other one to tread on its territory.

Figure 1-3 Main Antecedent and Process Variables Leading to Establishment of Teacher Center at Arcadia



1.3.2. Institutional Precursors

Role of the Experimental Program. Like the state-wide network, the mandate of the local teacher center which Dr. Saganne began to design in 1974 was to extend and root in local practice some of the Experimental Program's main tenets. There was also the hope that by creating a continuous link with local schools, the university could move away from a problem-by-problem relationship with local schools and establish more enduring, consequential ties.

The thrust of the Experimental Program, together with its reception at Three Rivers, were discussed earlier. The program was controversial, as was its director, Dr. Saganne, who was seen by some as a godsend and by others as a messianic intruder,with few voices in between. Since Three Rivers sent relatively few teachers or administrators to the program, local commitment did not develop as had been the case, for example, at Arcadia.

Some respondents felt that the uneasy relationship between the college of education and local schools pre-dated the Experimental Program but was further strained by it.

Links with district and county schools. Graduates of North Central felt more comfortable with its college of education and the Experimental Program. But a large number of district teachers had been trained elsewhere; many seem to have evolved an attitude of distrust. The university was "too theoretical;" it "really didn't know what went on in schools." The only continuous link between staff at the university and local teachers was through the supervision by university staff of student teachers during their internship period in local schools. Some of the strain here is hard to understand, especially since most of the university staff in elementary education had been former teachers and administrators. The best guess is that the views of teachers from elsewhere, together with the relative infrequency of ongoing university-school contacts, created a social distance that was increased during the Experimental Program.

As a result, when Dr. Saganne made a presentation of the teacher center concept to the executive board of the local teachers' association,

it was poorly received. "He got a quick 'no.'" The university was suspected of "making a power play" for a center which it would control. The proposed system for financing the center was unpopular; Saganne proposed that the money come from stipends paid to district teachers for their supervision of student teachers. Finally, Saganne was perceived as "too philosophical."

Saganne did not give up. He sent a more homophilous emissary Dr. Carlson, a former teacher, principal and superintendent. The funding formula was changed to include university support, in-kind services (space, materials) from the district and external funds. Commitments were firmed up as the composition of the teachers' executive board changed to a more favorable set, as the governance structure was elaborated and external funds became a reality. The final vote was split, but a majority approved the center.

Links with district administrators. On the whole, these relations seemed to be more harmonious than the university-local teacher relationship. Superintendents and assistant superintendents had more continuous contact with North Central and perceived the university as a useful resource. One of the assistant superintendents was a personal friend of Dr. Saganne and intervened periodically in district affairs on behalf of the university.

District administrators were ambivalent about the center. They saw its promise as a vastly enlarged source of in-service training for district teachers, and one which would, in large part, be externally funded. They also saw such a center coordinating all local in-service, although they were somewhat dubious of the governance structure in which teachers had a plurality of delegates. There was some sentiment that the center was an ambitious, idealistic undertaking that would never work and, if it did, might increase teacher militancy in the district. There were also doubts, shared by the school board, of the financial burden which would accrue, after the initial two years, to the school system budget when external funding was first reduced, then phased out.

In the planning sessions, however, district administrators approved the project and gave release time during school hours to

the teachers engaged in planning. When interviewed, administrators said they had few reservations about the center. Teachers, on the other hand, saw the central office as "uninterested," "dragging their feet" or "(the teacher center as) a low priority for them." That the district office had not found a facility to house the center a month before its opening was judged a good index of their level of commitment. In brief, field data are ambivalent.

Institutional orphaning. The physical location of the center may have typified the institutional fragility of the project. Dr. Carlson proposed a facility at the university, but saw "right away that the teachers were looking for a more neutral territory." Another proposal called for the center to be housed in a local junior high school, but the assistant superintendent wanted the center "not to be attached to one of the institutions, but to have more autonomy." In other words, no one was claiming the center. The university was eager to pass local control to the teachers, who were dubious and to the central office which was ambivalent. There seemed to be agreement that the first coordinator would not have a high-status background (as would, for example, a principal, a professor at North Central or an executive member of the teachers' association), which would have generated energy and support in at least one of the three constituencies.

1.3.3. Philosophical and Ideological Roots

These have been discussed in connection with the creation of the state-wide network.

1.3.4. Historical Persons

Most of the key actors have been identified. From within the university, the main protagonists were Saganne and Carlson. At the central office, the two assistant superintendents, Jensen and Blake, played decisive roles. No central figure emerges from the executive board of the local teachers' association, although two persons, Elsa Fisher and Debbie Halstead, were mentioned (and interviewed). Both were favorable to the creation of the center.

1.3.5. Historical Event Listing

The bottom row of Table 1-1 lays out the sequence of events

at Three Rivers and appear to emphasize the hesitations of the local teachers' association. There were two full years of informal contacts, before operational planning was undertaken. The catalyst seems to have been external funding, both from foundation and university monies, and the emphasis put on teachers' self-determination in the center's programming and governance.

2. THE FIRST TWO YEARS OF OPERATION, 1977-1979

2.1. OPERATION OF THE STATEWIDE TEACHER CENTER NETWORK, 1977-1979

2.1.1. Institutional Structure

Data are more sparse here. The tasks of the statewide network during these two years were chiefly those of putting into place its complex governance structure and of helping to consolidate the four founding teacher centers. One of the key events in the initial year was a two-day conference for coordinators and local policy and advisory boards. Work focussed on the mechanics of opening a teacher center, ways of identifying teachers' needs, how to develop a human resource file (of resource persons, their areas of competence and their availability), and techniques of publicizing the center and deciding on its priorities. Much of the information came from previous visits to centers in other states and from written information provided by the Teacher Centers' Exchange at the Far West Lab.

Annual reports to the Gibb Foundation admit that the governance structure was "awkward" in the first year, but "well-developed" by the second. Those delegates who were interviewed said that it took them a good two years to get oriented. The policy board had 11 members, 8 teachers from the 4 local centers' policy boards, and 3 from the statewide advisory board (a state-level administrator, a member of a local school board and a state college professor). The board's role in the early years was chiefly that of administering the foundation monies and overseeing the coordination of the network by North Central University. The advisory board had 20 members, including the local teacher center coordinators and strong delegations from the state colleges (5 professors) and from teachers (6 members). The board's role was to "enlist board support," advise the policy board"and "assess statewide educational goals." Board members complained periodically about the "vagueness" of their mandate, notably in relation to the statewide policy board.

Backing up these boards was the "statewide network staff." In fact, the permanent staff consisted of Brenda Buckley, who was virtually full-time on other functions at North Central, and Paul Saganne, who was Dean of the College of education. Their role was to act in the name

of the policy board to put out a quarterly newsletter, compile a statewide human resource file, link the SEA to the local centers, disseminate major reports, documents and research. The foundation money was also administered out of North Central. In reality, much of their time was spent advising local teacher center coordinators and putting out fires at these centers by calling key actors (as Brenda Buckley said, "I've been here 22 years; you end up knowing everyone.") and drumming up support for the network within the SEA. Buckley also oversaw the activities of two junior "resource colleagues," each at half-time, each assigned to two centers as a consultant, workshop leader or extra pair of hands. The colleagues had broad mandates: each tended to be used by the centers in her area of strength. In one case, this was as a popular workshop leader, who "drew a lot of teachers in" and "really got the center off to a good start." In the other, the colleague was more a process helper, assisting coordinators to lay out the physical space of the center and to talk through objectives.

In all cases, the structures were loose. The resource colleague role, for example, had emerged when a staff member of a special project at North Central had finished her work:

> B. Buckley: Paul (Saganne) said to me, 'Hey, maybe we can put her onto the teacher centers.' It sounded like a good idea, so we created the resource colleague job ... Things are loosely constructed around here. We do things as needs arise. It gives us a lot of flexibility.

In part, the low degrees of elaborated planning, of codification of procedures and of differentiation of roles corresponded to Dr. Saganne's managerial style. But there was also a widely shared ethos in the teacher center movement, stemming in part from the Experimental Program, that highly rationalized management drove out the more informal, trusting, spontaneous dimensions of carrying out such a venture as this. In fact, the use of interpersonal networks to get authorizations, support and resources for the network became more widespread as a result of low formalization in the management of the network. Also, managerial informality went along with decentralization. Statewide network staff were anxious to devolve responsibility to local

levels, both as a matter of policy (to show that the university had no hegemony in the network) and of philosophy ("Top-down decision-making can really stifle local initiative."). The report for 1977-78 stated:"Each center is unique; no effort has ever been made to encourage uniform development."

There was some friction here. The original resource colleague resigned at the end of the first year. "Things were just too loosely organized for her here." The North Central delegate to the 1977-78 statewide advisory board, who had also played a role in the creation of the center, felt that the university should have exercised greater central control, and that too much confidence was being placed in inexperienced delegates and coordinators for such a major operation as the statewide network. These feelings were shared by the Gibb Foundation. The response from Saganne was that the network would only flourish if local centers were allowed to claim ownership from the beginning.

2.1.2. Objectives During the First Two Years

The objectives elaborated in planning documents and proposals were reiterated in the annual reports. The network was to function as a "human resource exchange," with an emphasis on teacher-to-teacher exchanges. It should "encourage and assist teachers to assume responsibility for their personal and professional learning, to come to value their own resources." It was to "encourage teacher-initiated research, to enlarge the capacity for teachers to become significant knowledge producers." Finally, the network would try to "facilitate interactions between elementary and secondary level teachers" and to better integrate staff development activities between local communities and colleges or universities. The legacy of the Experimental Program was evident throughout.

At an operational level, the orientation was more activist. A formal statement of purpose first stressed that the teacher center was a setting "designed to provide continuing education for practicing teachers in a manner responsive to teachers' own definitions of needs." The document went on to list these objectives:

- encourage curriculum development
- support teachers wishing to implement new instructional directions

- facilitate communication
- share materials developed by teachers
- put teachers in touch with fresh learning resources
- support active learning on the part of teachers.

An early and continuing problem here was that teachers' "own definitions of needs" may not correspond necessarily to "implement(ing) new directions" or "initiat(ing) new research." The problem was apparently not discussed and may be an analyst's presumption. For example, one of the chief actors in the first two years said:

> If the teacher centers don't help in getting teachers to change what they are doing, then they are not going to succeed.

The dilemma here was that teachers, in "defining their needs," did not necessarily define them as the statewide network founders would have liked. Coordinators sometimes complained that teachers were "too much into making things" and less given to reflection on their practice. Whereas teachers would often ask for large-scale workshops - sometimes as an easy way of obtaining recertification credits - coordinators would regret that the more individualized consultations to change classroom practices were less provided for. There was the belief among some founders that teachers would progress from making materials to broadening their use in an integrated curriculum (e.g., using puppets to teach reading), but the evidence that this was happening is not strong.

One final objective at the institutional level: the hope of opening two new centers in the second year was not fulfilled. More preparation time was required, notably to mobilize support in the district offices and the state colleges.

Inferred objectives at the statewide level. As treated above, there may have been contradictions between the avowed objective of responding to teachers' self-defined needs and the underlying purpose of the founders to accelerate curriculum change, individualized instruction, integrated curricula and the formalization of craft knowledge by teachers. To some extent, the Experimental School philosophy spawned the problem by assuming that the process of self-directed staff development would spontaneously lead in these directions.

Moving to the statewide network itself, there may have been some latent objectives as well. The evidence here, however, suggests that they were not deliberate. We mention three.

Co-optation. By governing the network by means of a complex parity system, delegations from the key agencies and institutions were assured. State-level administrators, NEA representatives, state college professors were all represented, along with local delegates (e.g., member of a school board, head of the local teachers' association). By participating in the founding of this enterprise, which some saw as overly ambitious or as a duplication of ongoing provisions, they became more identified with it. They then became less delegates to the network than representatives of the network to their agencies and institutions, either at the state level or locally. Serving as a state-level delegate also appears to have reinforced commitment to the local teacher center. In many cases, no co-optation was necessary; many of the members of the statewide policy and advisory boards were graduates of the Experimental Program or of North Central University.

Increasing the impact. The boards met infrequently and conducted relatively little network business that was not already done by the coordinators or by staff at North Central University. Nor was the network such a complex operation that it required a 10-person policy board and a 18-20 person advisory board. What these board meetings provided was a unique occasion for educators at all levels and from every part of the state to get together. Given the geographical dispersion in the state, educational affairs had tended to be treated locally or through the state educational office. This was also a rare occasion for university-level people to talk with state administrators and teachers; there is some evidence that these cross-role communications were productive in creating links which later led to collaborative projects and more intensive relations at the local level, often built around teacher center events. These state-level meetings thereby constituted a forum for the discussion of educational affairs which led to reconsiderations of local educational policy and perhaps to revisions in policy in the SEA as well.

Resocialization. It would be overblown to say that the statewide policy and advisory board meetings were revival sessions, but there was a function of re-commitment to the goals of the Experimental

Program by its graduates, many of whom were active in the network. This function was obvious at a meeting of the teacher center coordinators which we observed. The original coordinators and resource colleagues would periodically refer to the doctrine as a safeguard against deviations:

> We're too much into organizing big workshops and not enough into individual personal growth. Remember, that's what the network is about.

Experimental Program graduates would get rejuvenated by this reinforcement from a reference group not available in the settings in which they worked. New members would receive some doctrinal socialization.

2.1.3. Founding and Key Persons

Key actors were the same as during the pre-founding years (see 1.1.4). At the statewide network level, the principal actor was Paul Saganne, who oversaw the founding events, provided advice to individual centers and sought to prepare for the creation of new centers and for the institutionalization of the network as a whole. Other actors either played a secondary role or were prominent in the creation of local teacher centers. One other person was somewhat more influential than others in the supporting cast. Belinda Herman, the first coordinator of the Savil teacher center, played a catalytic role in the creation of other centers by counseling future coordinators and by reviving the teacher center ideology. She was a stronger ideologue than Saganne, but shared some of his interpersonal and organizational skills.

2.1.4. Resources Available in the First Two Years

In the initial 3 years, foundation support amounted to about half of the total resources committed to the statewide network. It is unlikely that the project could have been started without these funds. As noted earlier, they were obtained chiefly through the efforts of Paul Saganne, who had contacts with the Gibb Foundation. An excerpt from the field notes:

> Saganne: The Gibb Foundation showed interest in the project; they had helped to fund some of our earlier projects.
>
> Buckley: The Gibb Foundation has always shown interest in Paul Saganne. That was very important.

The breakdown of the foundation funding is shown below. These are projected figures from the proposal, but they proved fairly close to the expended amounts. The first figure shows the percentages of foundation support, by year, with the dollar amounts between parentheses. The bulk of the funds (about 65%) are for staff salaries, covering teacher center coordinators and support staff.

The second figure shows the percentage and dollar amounts for the Three Rivers center, which is roughly equivalent to the others. As the external funding drops, the local school districts and state colleges are expected to pick up the slack.

Figure 2-1 Foundation Support of the Total Project

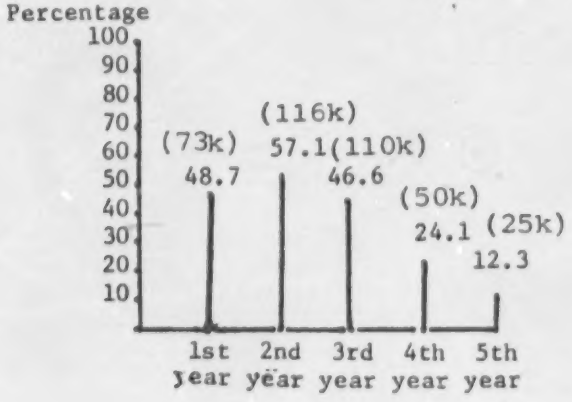
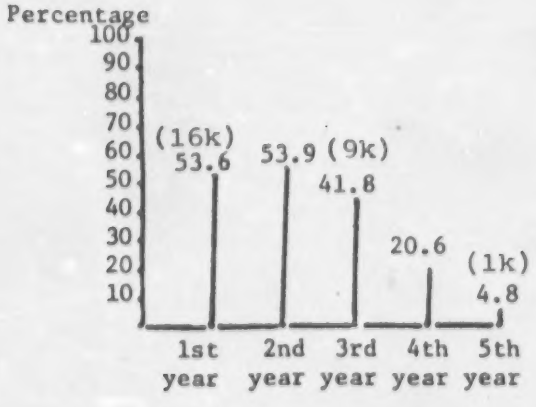


Figure 2-2 Foundation Support of the Three Rivers Center



At the level of the statewide network, foundation funds were to be picked up by North Central University, the SEA and the state branch of the NEA. The largest amounts (growing from $14,000.00 in the first year to $26,000.00 in the 5th) were to come from North Central. Funding contributed by the state and NEA branch were more symbolic. These monies were intended to cover meetings, publications, planning grants and special projects. As the charts show, both the statewide network and the local centers were expected to be self-sufficient after 5 years.

Much of the matching funds came in the form of in-kind resources. For example, local school districts or state colleges made space available to house a center; no new funds were needed. North Central borrowed from staff time for coordination, secretarial and publications work. Actual outlays of funds to match foundation aid were not heavy in the initial two years.

Dr. Saganne was anxious to diversify funding sources. In particular, Gibb Foundation aid would not cover all the front-end costs of starting up the projected 7 local centers beyond the 4 charter members. In the fall of 1978, he drafted a proposal for federal assistance in order to "assist and augment the existing centers in becoming well-established as well as to support the development of anticipated new centers to the Network." He asked for $125,000.00, most of it in the form of staff salaries. Although the proposal fit neatly into the funding allotments for a federal teacher center assistance program, it was not funded. The proposal was redrafted and resubmitted twice more in 1979 and 1980, again without success. A fourth attempt is currently in the works.

2.1.5. Events and Activities of the Founding Years

The important data here are at the level of the local teacher centers (see below). The network itself sought to support these centers and to put the complex governance and advisory boards into place. There were only two noteworthy events: the failure of the first federal proposal and the delay of the next wave of new teacher centers from 1978-79 to 1979-80.

2.1.6 Social and Interorganizational Dynamics

Consensus issues. There appear to have been very few conflicts during the first two years. The project was in its expansive, enthusiasm-generating stage with four centers created and three more in the pipeline. Sizeable external funds made the venture easier for local and state-level agencies which might otherwise have had to cut back in another sector to fund the teacher centers. Delegates from local centers who served on the statewide policy and advisory boards were careful to look beyond their local interests to the network as a whole. Aside from one flare-up in the third year (see below), this policy was continued successfully.

Conflicts. There were few; problems typically occurred at the local levels rather than at the network level. Three issues bear mentioning.

i. Goal displacement. The centers saw themselves as growth-enhancers, working intensively with individuals and small groups of teachers on reflective, change-facilitating topics. As it turned out, coordinators had little time to do this and teachers did not, in most instances, solicit it. Much of the energy went into organizing workshops, often large-scale workshops with college credit or contract recertification credit as one of the prime rewards. These workshops also brought funds into cooperating state colleges or universities. Events which (a) attracted large numbers, (b) gave visibility to the center, (c) were a source of revenues and (d) seemed to draw in secondary-level teachers who tended otherwise to participate less in teacher center activities were hard to resist. Coordinators often complained of this discrepancy between what they hoped to do and what the bulk of teachers were in fact asking for.

ii. Policy board affiliation. As mentioned above, delegates from local policy boards sat on the statewide policy board and voted on or consented to the expenditure of funds. There were no complaints of local lobbying until the third year, when delegates from one of the centers reconfigured proposals to distribute funds for special projects. As it turned out, their district got more and other districts less, although the sums were minor. To some extent, this was the result of some members' experience of how these

boards functioned, while other members were still learning the ropes. Since these experienced delegates had already served a term on the policy board, then had been reelected in different delegations (i.e., a former "teacher" delegate could reappear as a "teachers' association" delegate), they had a clear advantage. The upshot of this conflict was to limit nominally the terms of office of delegates.

iii. Supplanting administrators. Local conflicts with school administrators - principals and, in some cases, central office administrators - were feared,but did not materialize at the two sample sites, Arcadia and Three Rivers. Conflicts may have appeared elsewhere in the network. The issue was simple: in many districts, building principals were responsible for in-service training of their staff. In some, one of the assistant superintendents played this role. Unless the coordinators were interpersonally skillful, the teacher centers could be seen as usurpers. This problem appeared to be more acute at the newer centers than at the original four. It was best resolved by talking through the division of labor with administrators and by stressing, as one coordinator said, "that the teacher centers are only part of the in-service action."

Bargaining issues. These were latent in the initial years, but not as prominent generally at the network level as within individual IOAs. The overarching bargain was struck with state and local authorities. It had two parts. First, at the local level:

- The teacher centers will provide knowledge resources that are otherwise unavailable, in return for matching funds and, gradually, for full financing of the centers by local districts and state colleges.

Then, at the state level:

- The teacher centers will provide a rapid, efficient means of disseminating new programs and of upgrading teachers which the state education agency would otherwise have to deliver on a district-by-district basis. In exchange, the state will provide modest financial aid and will give preferential treatment to the network when needs for dissemination and training emerge at the state level.

Knowledge transfer. In the initial years, the network's role was modest. It consisted chiefly of facilitating exchanges between coordinators, such that a successful project in one center would be tried out in another. The network also served as a vehicle for the delivery of state-level projects to local centers. For example, the state arts council initiated the writers-in-the-schools project, then contracted with the teacher centers to organize local projects.

2.1.7. Barriers

At this juncture, only one problem not yet discussed is noteworthy. Coordinators began to complain, within their first year of service, of role overload. They were meant to oversee teacher center operations, work individually with teachers, visit schools, confer with administrators, keep careful records, order materials for teachers, contact potential workshop leaders, prepare newsletters and reports, prepare and attend policy board meetings and generate favorable publicity about the centers. They were also expected to be active at the statewide network level. Taking only the four original centers, coordinators turned over twice in the first four years at Three Rivers and Savil, once at Sunny Vale. Only Arcadia had no shifts in leadership or staff.

Other problems have already been mentioned: unwieldy nature of the governance structure of the network, fears that alternative (e.g., federal) sources of funding might not materialize, complaints by some about the unstructured or underspecified character of the network's administrative structure, and some discomfort with conducting a successful dialogue between colleges and school districts.

2.1.8. Facilitators

These too have been covered or are best treated within local centers. The key items are the energy and influence of the network initiator, Dr. Saganne, the presence of external funding, the presence of former teachers in key roles at local centers and state colleges and the tradition of decentralized management within the state.

2.2. OPERATION OF THE ARCADIA TEACHER CENTER, 1977-1979

2.2.1. Institutional Structure

When Arcadia joined the teacher center network, it aligned its governance and administrative mechanisms with the others. The policy board called for at least 10 and no more than 18 members, including 4 teachers, one principal, one superintendent, Lessing himself, one community delegate and two delegates from Arcadia State of which one, the Dean, was a permanent member. Six districts became members of the center, including 197 teachers and covering a radius of 45 miles. Center staff comprised a part-time coordinator, two part-time assistants and a part-time secretary. The other - and major - time commitments of the staff were to the pre-service training program.

From all accounts the governance worked smoothly. Meetings were infrequent (twice per year) but well-attended (100%), in part because the agenda included supper, the possibility to order materials and the selection of workshops. By contrast, the Three Rivers policy board met more frequently and had several absentees, notably delegates from the district office.

Unlike the other centers, the Arcadia center was clearly nested institutionally in the state college. Not only was it located there, but its staff were state college employees and its genesis was an outgrowth of the pre-service education program. In many ways, the center fed and strengthened the pre-service program, so that there was little dispersion of effort. The other centers tended to be new units, spanning but not clearly rooted in a collaborating institution. As Figure 1-1 shows, the other centers either straddle two units (Savil and Sunny Vale) or are wholly separate entities (Three Rivers), whereas the Arcadia center is within the province of one institution. The data suggest that such nesting provided a more stable base for institution-building than did more multi-party arrangements which took far longer to consolidate.

2.2.2. Objectives

From the outset, the Arcadia center stressed that the teacher

center "is a principal component of the pre-service education program at Arcadia State College." Joining the teacher center network was an opportunity to "expand the outreach effort to include on a regular basis in-service activities." The emphasis here as well was to assist former pre-service students, and to "enlarge communication and learning between pre-service and in-service teachers."

Beyond this, an analysis of interviews and written materials (newsletters, reports to the Gibb Foundation, newspaper clippings) yields five institutional objectives:

i. Enrich the general culture of teachers. This was done through a yearly workshop series, in which some of the presentations were not pegged to within-classroom topics. Examples were a depiction of growing up in Nazi Germany by an area resident and an actor's dramatization of the life cycle with excerpts from poetry and theatre.

ii. Expand local craft knowledge and instructional repertoires. The main thrust of the center was here, in the form of a vast resource bank containing kits, idea books, teacher-made materials, integrated curriculum units and audio-visual equipment. Many of the workshops also contained a hands-on, take-back-to-your-classroom component built around resource materials.

iii. Create exchanges. The center was meant to be a "place for teachers to informally meet" while attending a workshop or browsing. The newsletter stressed the at-home, relaxed atmosphere of the center. Interspersed throughout the resource bank were armchairs and indirect lights, magazines of general interest, tables for small groups, corners for more private chats. There was coffee and, often, home made cakes or cookies. There is no doubt that such an environment drew in teachers and facilitated contacts that continued when teachers went back to their schools. Coming to the center, informants said, was associated with "being in a cozy place you could unwind in and meet people and get to look at all those materials they had." This was also an occasion for area teachers to meet with teachers in training and thereby facilitate their entry into local schools. There may also have been a hidden agenda

here, although no probing was done to verify it. By multiplying contacts between area teachers and pre-service students, Arcadia State "positioned" its teaching candidates for getting better placement opportunities in a rapidly shrinking job market for new teachers - one in which Arcadia State often had to compete with neighboring state colleges and state universities. Indications are that this strategy was successful.

iv. Involve the community. As part of its service mandate, the college in general and the teacher center in particular, sought to connect more closely with the community. There was very likely a latent reciprocity motive here: by serving the community, the college would be supported by community members who might then send their children to Arcadia State, help out during financial crises and go to bat for the college on political issues (e.g., getting state-level approval for a post-graduate program). The teacher center met this objective initially by providing meeting rooms for various community groups. There was then a branching out in the third year to a community-based project to create a nature study area in the township (see 6.1.4. the "nature studies" serial).

v. Bring about instructional change. Lessing said that on coming to Arcadia State, he had sought to apply some of the ideas that were current in the Experimental Program. Goff had similar ambitions. As shown earlier, the creation of the teacher center grew out of a child- and materials-centered approach to classroom learning derived in large part from the Experimental Program. Overall, there were four prongs. (1) Lessing sought to "work with teachers to become more facilitators of learning rather than direct instructors." (2) Part of that objective had to do with individualizing instruction. (3) Another part entailed allowing more self-direction by pupils. (4) A related objective was that of integrating curricula, often by combining basic skill mastery with a substantive area (e.g., computations built around a series of experiments or observations, language arts tied into a social studies project).

This turned out to be a tall order. "It was harder to do than I thought; I had to modify that approach." Arcadia had a high number of more "traditional" teachers and was an educationally conservative area.

There were also larger classes to contend with and a "less systematic preparation of teachers to do child-centered education." In the early years of the teacher center, three devices were used to promote these objectives. First, pre-service teachers were taught "strategies" of carrying on group and individual work, inquiry-based teaching and diagnostic/clinical procedures for organizing basic skills. Next, teachers were invited into the center with their pupils for two weeks. This allowed the pre-service teachers an opportunity to do supervised, hands-on work. It also enabled teachers to see these approaches used on their own pupils. At the same time, visiting teachers could browse in the center for materials.

The third device was possibly the most effective: the materials themselves. Many of the kits involved simulation and other gaming techniques. Others had built-in integrated curricula, as did some of the teacher-made materials (activity centers). Few could be used easily in whole-class instruction. Many were designed for pupil self-direction. It was through the materials that many of the Experimental Program objectives were best channeled. Outcomes analysis (see later) indicates that this strategy paid handsome rewards, especially since many of these materials were superior to those accessible to teachers in the area schools.

A caveat is in order here. There is no evidence of a carefully orchestrated plan for changing classroom life in the area. The Experimental Program was a model, not a blueprint. Had there been such a design, it would have come through in the multiple interviews with teachers using the center. Teachers were aware of and appreciated the center's doctrinal pluralism. They also knew how to pick and choose from among the offerings. Here is a representative excerpt from the field notes:

> I ask whether she sees the center favoring one orientation or approach. She says, 'No, I don't see that. They have a really good variety of things over there.' She also reminds me that most of the new materials ordered were requested by teachers, not bought to buttress one orientation. She says, 'I just don't feel that the center reflects any one movement, like the Open Education movement.'
>
> I ask then about the 'learning centers' and their tie to a highly pupil-centered approach. She answers that the first time she saw them at the center she thought, 'What in the world are they?' and that

> the center staff 'were probably pushing them a bit. But since I have gotten to work with them, I've found that there are a lot of things in them that are good. I can also take some parts of them and not others. It's not the kind of thing I could have kids doing around the room. I'm still pretty structured.'

2.2.3. Key Persons

As treated in detail in the preliminary section, the two key actors were Don Lessing and Robert Goff, the chairman of the Education and Psychology Department. Essentially, Goff backstopped Lessing by providing administrative and financial help and by bringing in new projects. The two worked closely together.

In the second year, two more actors appeared on the scene. First, Gene Nickerson moved his office from the elementary education section directly to the teacher center, and taught his courses on reading out of the center. Then, a new staff member was hired, also a reading specialist, and was assigned directly to the center. Carla Smetana became essentially a deputy and colleague of Lessing's, working with both pre-service and in-service teachers and offering summer workshops in the teacher center program.

These events are significant at four levels. First, this meant that the majority of elementary education staff was now housed in the teacher center. There were even plans to bring in another staff member in special education.

Secondly, the backgrounds of these two people were close to Lessing's and well attuned to contacts with practitioners. Both had been rural elementary-level teachers in the region. Smetana had been enrolled originally in the "non-degree program" in which the center became active before joining the network.

Third, the appointment of Smetana was a good indicator of institutional priorities at Arcadia State. Her academic qualifications were below those of other candidates (no Ph.D, no academic publications, no focussed research activity). But her service qualifications were impeccable. She was observed and reported to be an effective instructor and highly skillful counselor, ideal for the one-on-one relationships promoted by the center. Apparently, the college president had reaffirmed to her the institutional commitment to service and outreach which had, in fact, made her a stronger candidate than others.

Finally, the center began to acquire a critical mass of staff, including a versatile secretary-documentalist and work-study aides. It was now more an establishment than a one-man operation. At the same time, there was close collaboration between the staff. It is at this juncture that informants began to talk about the "family" atmosphere at the teacher center, to which Carla Smetana probably contributed the most. This had the effect of making each cohort of teachers in training into a more cohesive, interpersonally bonded unit. It also created an ambience that in-service teachers liked, especially when they sought advice from teacher center staff. Gradually, the workshop and materials-borrowing functions of the center expanded into a greater problem-solving mode. Teachers reported that they might call in or come in to talk over a problem encountered in the classroom or even in their personal lives. Many of these teachers had been former students at Arcadia State. More on this theme later.

2.2.4. Resources

Like the other founding centers, Arcadia received approximately $16,000.00 from the Gibb Foundation during each of its first two years of operation. Since many of the fixed costs were covered, the Arcadia center got to spend more on materials than did the other centers. In fact, almost all the funding made available went for the purchase of materials and equipment (e.g., in the third year, a portable video camera). In this way, Arcadia was more privileged than centers starting anew and having to make initial outlays for staff, materials or rental of facilities.

The state college gave strong backing to the center, possibly the strongest "outside" funding of the nine teacher centers. Facilities were provided at the college. Some of the materials were bought from library funds. Virtually all staff salaries were covered by the elementary education department, including work-study students and part of secretarial help.

In return, the teacher center brought in funds through workshop enrollments, which averaged 30 participants (see later). Each credit hour cost $12.00; a typical workshop brought 2 credits. Teachers had to accumulate 15 hours for contract renewal every five years.

No funds were required of the participating school districts. There were in-kind services, such as release time for workshop participants and for delegates to the policy board, and free transportation to the center. From the perspective of the surrounding rural school districts, the center was an unhoped-for treasure in a resource-poor environment. Not only were materials numerous and available, but many had been ordered to meet the specifications of area teachers. This sense of joyful disbelief comes through in interviews. An illustration:

> I got things through the center I never could have ordered myself, like, for example, things in constructive movement. The school systems around here just don't have the money for that ...He ordered everything I asked for. It's a little like Santa Claus.

2.2.5. Events and Activities

Over the first two years the center generated an activity format which remained largely stable, but was embellished on, in the ensuing two years. The format had the following parts:

a. a one-time workshop series for area teachers and residents covering both general topics (e.g., China and its schools) and classroom-based topics (e.g., using recycled materials in the classroom);

b. a one-week summer workshop series on selected topics, (e.g., reading in the content areas), usually with a follow-up requirement involving some changes within the classroom;

c. a one-week workshop built around desired changes in classroom instruction. Teachers would identify a project theme, consult, then borrow teacher center materials to carry it out, and submit work samples and evaluation data after the trial period. This was, to judge from informants' accounts, an effective device for following through on initiatives which often in the past had been half-heartedly executed.

d. visits by area teachers and their classes for 5 sessions during which pre-service candidates carried on small-group work and visiting teachers observed and browsed through teacher center material. The claim made in teacher center reports - that "an outgrowth ... was requests from teachers for assistance in incorporating these activities and learning experiences in their classroom routine" - was well supported in interviews with area teachers.

e. drop-ins and materials-borrowing from the ever-increasing resource bank, which constituted the primary in-service activity of the center.

f. special projects, such as the water diversion project, the special education project and, later, projects carried out in collaboration with other centers in the network, e.g., the poets-in-residence.

g. consultations with individual teachers asking for help in diversifying their instruction, enriching their curricula, individualizing treatments and, in some cases, relating to pupils or parents.

One important feature of this format, and one which distinguishes Arcadia from the other teacher centers, was that teacher center staff did most of the teaching and consulting. Week-long workshops were taught by Lessing and Smetana, who also handled the majority of "desired change" workshops. Apart from the one-time workshop series - discontinued in the third year - teacher center staff directed substantive activities. They were far less the "middleman" or organizer that characterized the coordinator roles at other centers. This meant that they worked directly with and followed up on users' attempt to improve local practice. It also made for role overload (see later).

Use of the center. The center kept fewer statistics in the first year than in the second. In many ways, the objective was less that of logging the greatest number of participants or drop-ins than of making the center a routine part of the professional life of the 197 teachers in the six member districts. In other words repeaters were more important than numbers of users.

Statistics for 1977-78 are thin. Apart from claiming some 550 "visitors" to the center, there is no breakdown. The picture is more differentiated for 1978-79, with breakdowns by month of workshop participants and visitors-drop-ins combined. The total is 982 - almost double the first year - with peaks in October-November (325) and March-June (308) and valleys in July (15), September (22) and December (19). Many of these were repeaters.

Outcomes. Rough estimates from the site were that by the end of the second year, about 45% of elementary-level teachers and 20% of

secondary-level teachers were multiple users, i.e., came for at least two activities. The percentages were to increase the following year (see later). There was also a perception within the state college that this was a successful venture, bringing credit and visibility to the college along with some funds through workshop enrollments.

There were also tangible indicators of practice changes, perceived practice improvements and capacity growth on the part of area teachers. The practice changes came from 3 sources:

a. the intensive visits to the center by teachers and pupils. Center staff reported and informants confirmed that these sessions often led to teachers observing, then trying out many of the techniques used by interns. Teachers began to report that they were doing more small-group work, using activity centers and simulations, individualizing math instruction and using diagnostic procedures for reading and math. To get at the dynamics of these changes stemming from what was called the "intern" program, here is an illustration from the field notes:

> (In the fall of 1978), the center had just set up its specialized area for early childhood education and was interested in having a first-grade class try it out. The first-grade teacher says, 'I left the choice of activities up to (Lessing), but I told him we couldn't miss reading.'
>
> While the interns and Carla Smetana were working with the children, 'I ran around the center getting all the ideas I could.' She checked out materials having to do with activity centers, teacher-made materials and pupil-made projects. She also took notes on some of the activities the interns had used with her pupils. For example, two interns had created math games... The children appeared to enjoy it. Mrs. X took it back with her.

b. the one-week workshops, which led to the design, then execution of a classroom-based experiment; and

c. the materials, whose use often entailed group or individual work, inquiry-based learning and integrated curricula.

Many of these changes, it was reported, were consolidated when center staff helped with follow through: visiting the teacher's class, advising on problems encountered, suggesting new materials.

Practice improvements were widely claimed by informants, administrators and center staff. This will be handled in more detail later. For now, note that reports centered on enriched curriculum offerings,

better diagnosis of difficulties, more differentiated treatment of pupils, higher levels of pupil motivation and higher achievement levels.

Professional capacity changes came in two parts. First, teachers tried out an activity of the center, then another, then became routine users. The center gradually was built into their normal cycles of preparing the new school year, solving instructional problems and stockpiling resources for appropriate moments. Here is an excerpt:

> She says she was enrolled in a theater class requiring (the design of) a drama project. A fellow participant came back to the school with a box of plays from the teacher center. 'I realized how much there was so I went in myself and saw'... She then enrolled in the summer workshop program ('We found out we could use that for recertification credit'). Next she volunteered for the poets-in-residence program, thinking 'that someone else's ideas might be as useful as my own' ... Since then, she finds herself coming over more often; she finds herself keeping more in touch with the center program through the newsletters and her visits there. She has also started to drop into the center without any specific objective, 'just to look around.'

The second part of capacity change is more innovation-centered. Virtually all users interviewed report, as one said, that "the center made me want to try out doing something different than I usually did. I got exposed to things I guess I never would have seen otherwise." When asked to evaluate these inputs, informants speak uniformly and immediately of "extending what I can do," "really making changes I used to think about only," "getting a lot stronger in areas I'm weak in and really good in areas I'm strong in."

Often center use was associated with fighting routine and professional stagnation. This will be treated more in detail later. For now, note that both teachers and area administrators saw the center not only as a resource bank but also as a source of professional revitalization. Administrators stressed this aspect. Below is an excerpt from an interview with a county superintendent:

> Right away I could see the possibilities. So could the teachers ... There were a lot of different ways of doing things, like those activity centers. It was really good for our

> staff. A mind-opener. So many of them are, well, sort of older and they're repeating the same things. This kind of rejuvenated them.

Finally, an emerging outcome in the initial two years was the increase of links between the center and other departments at Arcadia State. In some instances this took the form of direct collaboration between Lessing and other professors, e.g., the water diversion project was done in tandem with a science professor, the special education program with an instructor from that department. In other instances, the center became a college-wide resource. A math professor gave a workshop in the one-time workshop series, then looked more closely at the materials available in the center and borrowed some for his own course work. Courses in physical education, music, early childhood and art were either taught out of the center or relied on materials stocked there.

2.2.6. Interorganizational Dynamics

Consensus. Consensus was strong among the three groups: teacher center, state college and school districts. External funding made it easier to expand rapidly the gamut of activities without having to bargain for funds from the state college and area administrators who might otherwise have been more reticent. Also, the center's extension into in-service corresponded to a felt need.

Conflict. There were no conflicts between the parties beyond the barriers listed below. In part, the initial years were seen as an experiment, watched closely but not contested by those who had doubts about the enterprise.

Bargaining. These issues are handled at length in Section 3. Briefly, two modal exchanges emerged early. First, area administrators reciprocated the virtually free services and resources of the center by granting release time and free transportation to teachers. Next, the state college covered some of the expenses (staff salaries, notably) and allowed administrative flexibility to the center in return for what it hoped would be a successful and visible outreach activity.

Knowledge transfer. Another topic treated in detail in Section 3. For now, note that the bulk of the knowledge handled by the center

was craft knowledge (ideas, experiences); more carefully designed but not necessarily scientific knowledge products such as kits and manipulative math materials; and some theory-based concepts and tools, such as diagnostic procedures in reading and math. As noted earlier, the vehicle of knowledge transfer was primarily center staff.

2.2.7. Barriers

A short list is in order here; more detailed treatment is given in Section 3.

i. Skepticism within the state college. According to informants, some staff members in the psychology and education departments were skeptical about the venture. There were concerns about overreaching and about draining energies and resources from the pre-service training function. The novelty of the teacher center operation also drew criticism from what some informants called "the old guard, who are pretty much in control; they're reluctant to accept anything different."

ii. Initial dispersion. Some users felt that the center had trouble at first in deciding which areas to concentrate on. There was a little "riding out in all directions at once."

iii. Gaps in the resource bank. The materials stockpiled in the center were already voluminous but there were gaps. "For example, they were weak in music and didn't have that much for secondary teachers."

iv. Lower participation of secondary-level teachers. This was a chronic problem in the teacher center network. The reasons are multiple (see later) and only partially due to limitations of the centers themselves. At Arcadia, the main problems were (a) the lack of appropriate materials, (b) the fact that the center grew from and was staffed by elementary education specialists, and (c) the lesser need by secondary teachers for a variety of materials within their area of specialization. Use among this public grew in the following years, in part because Lessing "targeted" junior high and high school teachers and got them to order materials which they would borrow from the center.

2.2.8. Facilitators

In Section 3, we look at the full set of facilitating factors.

For now, facilitators are best handled as factors which contributed to the successful introduction of the center in the area. This entailed the accomplishment of the four following tasks:

i. Get teachers to come to the center. Once this happened, several informants reported, they were "hooked" on the wealth of materials and the conviviality of the center, and became regular users. Hooking was facilitated by:

- Energetic outreach. When users were asked how they heard about the center, they usually mentioned a presentation or visit by center staff. The center newsletter also contained invitations to visit, promising satisfaction. But most users stressed that initial contact was personal rather than mediated (see below).
- Negotiating. The chief device was to invite teachers to visit the center during school time or part of school time. Area administrators agreed to closing schools a half-hour early so staff could visit the center.
- Social contacts. One of several such devices was an elaborate "breakfast" to which all area teachers were invited at the center. Once there, they were struck by the wealth and diversity of the materials.
- Offering appealing services. Teachers were told that the center would purchase materials that area teachers would order, virtually on a blank check basis. Such materials were then stocked in and borrowed from the center, which in turn led to further use.

ii. Get teachers to spend time at the center. The first task facilitated the second, but did not ensure it. Facilitators here included

- Informality and comfort of the setting: the armchairs, rugs, music, cozy corners, coffee and occasions for relaxed professional talk;
- Perceived warmth and conviviality of the staff;
- Variety of formats and programs.

iii. Show that center services solved local problems or improved practice. This was done in several ways and reflects the multiplicity of linking and process-helping roles. For example:

- Process-helping. This became an important leitmotif when

users accounted for their continued use of the center. In particular, center staff were perceived as supportive and as effective process counselors. Two examples from the field notes:

> User 6: She says, 'There aren't any barriers or masks in there.' She goes on to say that the center staff make teachers feel that 'not having what you want or not knowing what you're looking for doesn't mean that you're not o.k.'
>
> User 11: It's really good with them, even if you don't understand exactly what you're looking for when you come in. They can help you get clear about it and then you can find it.

- Solution-finding. Users stressed that center staff would typically (a) turn around a request, even a casual one, very quickly and (b) come up with materials or contact numbers that answered most requests satisfactorily.
- Follow-up. Quite often, center staff would appear in area schools to see what had been done with materials checked out or to see whether a problem had been satisfactorily resolved. This often led to another cycle of process-helping, resource-linking and solution-giving.
- Materials. Virtually all users said that the wealth and diversity of the center materials allowed them to enrich their curriculum, individualize instruction and diversify working arrangements. Also, the selection of materials was cleverly done. Many could be taken apart, configured, broken into smaller units, thereby heightening local adaptability.

iv. Get support for the center. From the school district side, support was gained chiefly (a) through the response to requests and the success of teacher center programming, (b) through the ordering of materials by area teachers, who then came to depend more on the center, (c) through the growing commitment of delegates to the center's policy board, and (d) through the provision of rewards in the form of continuing contract credits. On the state college side, support came initially (a) from the perceived success of the venture and (b) from the drawing in of college staff who found materials and facilities for improving their courses.

2.3. OPERATION OF THE THREE RIVERS TEACHER CENTER, 1977-1979

2.3.1. Interorganizational Context and Main Events

As shown in the previous section, the start-up conditions for the Three Rivers Teacher Center were not auspicious. The district administration had been favorable, but not actively so. The school board was divided, expressing concerns about the gradual shift of funds to full local financing after 5 years. Teachers were flattered by the concern for their self-defined professional development but watchful of the university which it suspected of patronizing the project for its own ends. North Central University was the most active, committed sponsor, but the college of education was anxious to give over control and initiative as soon as operationally possible. This may have amounted to giving over control to agencies or individuals who did not want to claim it. The genesis of the Three Rivers center, in marked contrast to the Arcadia center, is characterized by (a) the lack of a central agent carrying the project politically and operationally and (b) the large number of individuals or groups involved in decision-making.

The events of the first two years turn around the difficulty of firmly establishing the center in the Three Rivers landscape. Leadership was judged to be poor - for some, near-fatal. The center was poorly lodged, first in a classroom, then in the annex to the city library. Programming was generally slack, as the coordinator waited for teacher-formulated needs which seldom came in operationalized form. The first year was judged by one key informant as "not a successful venture," and by another as "a mess, and it didn't get better right away." The general consensus was that the second year was far more successful than the first, but still left the center organizationally unconsolidated.

2.3.2. Institutional Structure

Staffing. The first two years were plagued by turnover in personnel. The first coordinator left after the first year. All informants judged her performance to be unsuccessful. The global portrait is that of a poorly-organized and over-extended head, who was

late on assignments, passive in programming (waiting for initiatives rather than taking them), uncomfortable in an administrative role and overly doctrinal in her commitment to teacher self-development. She was also poorly paid - as were future coordinators - and a single parent. For the second year there were two co-coordinators - judged to be a more satisfactory system - of which one resigned at the end of the year. The second co-coordinator, Grace Bush, was a graduate teaching assistant at the college of education who took on effective leadership in the two following years.

Physical plant. In its first-year report to the Gibb Foundation, the center was described as "informal, flexible, relaxed and cozy," occupying one large room (32' by 18') with 32' of bookshelves. Although these facilities were reconfigured several times in these and ensuing years, they never appeared to be satisfactory. There was too little space for stocking and displaying materials, for carrying on more than one activity, for combining social exchanges (informal talks over coffee) with more instrumental uses (drop-in, one-on-one counseling). Space constraints appear to have severely limited the range of action of the center throughout the four years studied. As noted earlier, Arcadia began with approximately three times as much space and was able to extend its facilities as more materials were ordered.

Decision-making structure. From informants' accounts, the local policy board was more active and influential in the initial years than later. As an outgrowth of her ideology, the coordinator practiced power equalization by referring even relatively minor decisions to the policy board and by delegating programming to the teacher representatives on the board in consultation with the local "base." The policy board had apparently few experienced administrators, so that time was lost in long discussions and unrealistic proposals. Board members with such experience decided to play a non-directive role in order to create teacher "ownership" of the enterprise, but this appears not to have worked. Teachers did, however, have the majority of votes, as was the case at all centers in the network. The Three Rivers board contained 8 teachers on its 13-person board, including teacher delegates from special, vocational and parochial schools.

2.3.3. Objectives

Interviews and analysis of teacher center reports and memos suggest that the thrust of the Three Rivers center was slightly different from that of Arcadia. Four general objectives characterize the first two years.

i. Acceleration of change. The emphasis is stronger here than at Arcadia. Three of the formally articulated objectives were:

- "put teachers in touch with fresh learning resource,"
- "support teachers implementing new instructional directions or strategies,"
- "support active learning."

Other centers had similar objectives, but these tended to be either more muted or less prominent in the full set of institutional goals.

ii. Peer exchange. There was a strong emphasis on "teachers helping and sharing with other teachers." Center programming featured "sharing evenings" between groups of teachers and the identification of skills which teachers could pass on to one another. One consequence of this emphasis on peer exchange was to reduce the importance of the university's role as a source of information and expertise.

iii. Teacher ownership. This was another prominent theme, more strongly voiced here than at Arcadia. Some of this stemmed from suspicions about the university's intentions, some from the doctrine surrounding the teacher center movement throughout the country. Stronger local ownership did emerge in the third and fourth years, but the initial effects of this policy seemed to be negative. On the one hand, programming was given over to the teachers, who did not respond well at the start. On the other, policy board members began to complain of "rabble-rousing," sharp criticism by teacher delegates of both the district administration and the college of education, with no constructive intention.

iv. Teacher self-reflection. This had been a strong concern of Paul Saganne, stemming from the NIE study described earlier. The notion that teachers "look systematically at their practice as researchers do" was appealing but apparently unworkable. Teacher self-defined needs tended to be more short-term and practical, especially for the elementary school teachers comprising the bulk of participants.

2.3.4. Key Persons

The "frontstage" roles were played prominently by the first co-ordinator, Agnes Bekins, and her two successors, Grace Bush and Paula Springer. But there were important backstage roles played by faculty members at the college of education. Joseph Harrison had helped to negotiate the center. He served for the first two years on its policy board, where he appeared to play an important role in compensating for the lack of structure and direction. Paul Saganne remained active in the first two years, but worked also from behind the scenes, e.g., by convincing district administrators and school board members to continue their support for the center when some sentiment ran towards closing it, by recruiting and funding a "resource colleague" to help out, by recruiting and backstopping Grace Bush during the second year. The district administrators, Hal Jensen (now superintendent) and Peter Blake, responded to Saganne's requests to stay with the project.

2.3.5. Resources

The breakdown of foundation funds for the center was shown earlier. During this period, when external funding was at $15,000.00-$16,000.00, the school district's contribution was approximately half this sum, and was used for secretarial help and for maintenance and space. Release time was also given to policy board delegates. The college of education provided an equivalent amount, but contributed some additional staff time and services which could be freed from other commitments covering those posts. The resource mix would become a more crucial issue as of the third year, when foundation support dropped markedly with more of the slack to be picked up locally.

2.3.6. Activities

The center states in its first-year report that the greatest demand was for an "informal format in which teachers would learn through discussion with a resource person (i.e., a workshop on learning with both sides of the brain) or through learning-by-doing (e.g., making math games)." There followed a list of some 15 workshops, of which only one seems to be other than learning-by-doing. Examples are: growing plants in the classroom, simple binding, puppetry, language experience in reading. There were also "sharing evenings" built around teachers dropping informally.

The attendance figures are higher than expected. One-time workshops drew 675 teachers and 88 drop-ins were logged. On-site informants had claimed that workshop attendance was poor and that there were very few drop-ins. Apparently, the pool of potential district and county users, when multiplied by repeated use, could have reached 4,000.

Another noteworthy indicator: there was apparently no input from the college of education during that year, apart from participation on the center policy board by Dr. Harrison. Such inputs rose substantially when Grace Bush became co-coordinator, indicating that boundary-spanners can and will draw from both universes.

Attendance shot up during the second year, during which one key important person says "there were lots of workshops and lots of enthusiasm." Aside from the debugging and change in leadership, another causal factor was that center offerings could now be used for in-service continuing contract credits and for post-graduate credits at North Central (more on this below.). The stock of materials also grew, attracting notably more elementary-level users. During this and the following year, a diverse and apparently successful activity format was elaborated, consisting of:

- one-shot workshops, for the most part on practice-relevant topics such as geometric art, songs for the classroom, using the newspaper in the classroom, etc.;
- continuous workshops, some of which were used for graduate-level credit at North Central University (law for educators, adolescent development);
- drop-in and materials lending;
- meetings of local community groups;
- "sharing" evenings for specialized teaching units e.g., special education teachers, mathematics teachers;
- display and circulation in district schools of "activity centers" (integrated curriculum units with suggestions for in-classroom activities).

The second-year figures are impressive. Totalling in-service courses, drop-in meetings and non-credit workshops, 2,200 teachers were

logged, many of them presumably repeaters, because the full number of teachers using the center at least once is given as 225. It was then calculated that this would account for about 50% of all district teachers and 25% of all non-district (i.e., county, parochial) teachers. The breakdown for multiple use was as follows:

no. visits	no. teachers
1	106
2-6	99
7plus	20

Finally, a new role for the teacher center began to emerge during the second year: that of "middleman" for university events. The center handled the registration for teachers taking courses at North Central and organized some of the extension courses eligible for post-graduate credits.

2.3.7. Interorganizational Dynamics

Consensus. There were few serious conflicts in the initial years (see below) and a loose consensus about the main thrust of the center (professional development of teachers) and the distribution of power (weighted toward the teachers, with appropriate inputs from the school district and the state university). It was generally felt that were the center better managed, its goals could be attained.

There were, however, disagreements over that management, notably about the degree of structure and the deferral of programming until teachers took the initiative.

There was also some ambivalence over turf. One of the assumptions behind what programming there was in the first year was that university staff had less legitimacy in advising on school practice than did fellow teachers. In part, this was a defensive gesture; college of education staff were perceived as aloof or arrogant, with their "superior knowledge," but it turned out that this was largely a myth. Also university people were listed in the "resource bank" as "educators," with the same status as other educators. But they were seldom called upon.

There may have been a similar attitude toward teacher center staff, who were not recognized as fellow guild members by teachers. When the

staff visited schools to assess needs, there was some embarrassment on both sides. Center staff had the impression of being perceived as "spies." The assumption here seems to be that the center could be involved in training or brokering, but not in direct within-classroom concerns, unless specifically invited.

Conflict. These were minor, and were quickly resolved, unless they lay outside the purview of the teacher center. For example;

Parties to the conflict	issue	how resolved
• teachers and university	university's presumed desire to control center	no such desire acted on; teachers assuaged
• teachers and district administrators	district policy and management of teacher affairs	not resolved, lay outside power of center
• teacher center and some school administrators	perception that teacher center would take over all in-service	administrators assured by district superintendents

Bargaining issues. These were latent issues in the initial years, since each side was trying to take the measure of the other as they collaborated to achieve a common goal. Also, these issues are inferred; they did not appear to be explicit or even articulated by site informants. Four such implicit exchanges can be inferred in the opening year:

i. Active teacher participation became contingent on rewards, i.e., teachers would participate if center activities could be used as credits toward contract recertification and post-graduate degrees.

ii. The university would be "allowed" into the arrangement if it accepted the superiority, or at least the equivalency, of craft knowledge over more research-linked knowledge.

iii. In exchange for a wider array of in-service offerings, the district administration would cede effective control over in-service (choice of instructors and topics, certification).

iv. Teachers were given majority votes in all policy boards, in return for which they would avoid militancy or partisan stances.

Knowledge transfer. This topic is handled later in detail. For the initial years, we note that predominantly craft knowledge was exchanged, often for purposes of practice improvement. Much of it

was communicated between peers, some from local experts housed in specialized agencies (social welfare agencies) or in the state university. Some knowledge was more technical and, to a degree, science-based, e.g., workshops on adolescent development given by local psychologists. The center itself acted as a broker, rather than as a transmitter of knowledge inputs.

2.3.8. Barriers

Several have already been mentioned. To recapitulate and provide a fuller census:

- Lack of structure hampered programming and ongoing administration.
- Poor facilities limited use.
- Poor leadership (passive, dispersed) diffused efforts.
- Staff turnover hampered continuity and conveyed the impression of an inherently unsuccessful venture.
- Secondary-level teachers (as at the other centers) were less frequent users.
- Centrifugal authority fragmented the decision-making process.
- Low perceived homophily existed between teacher center staff and area teachers.
- Exalted expectations for the center, on the part of some active teachers and some school board members, made these growing pains harder to accept. The center may have been oversold, although there is no clearcut guilty party.
- Lack of firm ownership kept the center marooned among the 3 parties.

2.3.9. Facilitators

As the balance sheet was clearly negative after the first year and moderately positive at the end of the second year, the list is shorter:

- Strong support from the college of education, notably from its dean who saw the teacher center as an important personal commitment. His interventions helped to gain the time needed to redress the situation.
- External funds which helped to view the first years as experimental, entailing little local sacrifice.
- Status enhancement for teachers and their principals, when the peer exchange structure put some teachers in the role of workshop leaders.
- Accreditation through center workshops. Several informants said that using the center was the "quickest and easiest" way to get credits,

since there were usually no papers, no exams and the possibility to use one's own classroom as the locus of application.

- Administrative support, albeit lukewarm, helped the center to weather the difficult period.
- Energetic and interpersonally skillful leadership emerged in the second year.

3. THE PRESENT CONFIGURATION

3.1. THE STATEWIDE TEACHER CENTER NETWORK, 1979-1981

3.1.1. Main Events and Institutional Context

The marker events during the past year and a half were as follows:

- Addition in 1979-80 of five new centers, including consortium of small rural schools in Midwest and in neighboring states;
- Planning of two additional centers for 1981-82 and, beyond that, of two more centers, effectively blanketing the entire state;
- Anticipation of a budget crisis which could weaken the new centers, dry up potential sources of funds (e.g., state educational agency) and pit centers against one another in the competition for limited resources;
- Emergence of a pipeline to the state education office, which began to rely more heavily on the network to implement new curricula and statewide upgrading efforts for teachers;
- Absence during 1980-81 of the chief architect of the network, Paul Saganne, with few drastic effects, so that the network was perceived as having reached institutional maturity.
- Sizeable turnover of coordinators of existing centers.

These events are a mixed bag. On the one hand, the network was extending its scope, creating privileged contacts with the state education office and surviving the absence of its chief officer. Delegates reported with pride that the teacher centers were becoming more visible, individually and as a network, and that they were seen as an ideal vehicle for statewide in-service needs. On the other hand, funds for the transition from foundation to local monies were lacking, personnel was unstable and there was the danger of intra-network conflict over the diminishing resource pool. When coordinators met early in 1980, they spoke almost exclusively of their financial concerns. These and the statewide policy and advisory board meetings began to focus on lobbying strategies for obtaining state and federal support. Individuals were assigned to contact the governor's office, influential legislators and state superintendents. As it was, the statewide advisory board had three SEA senior administrators among its 34 members. The policy board had one SEA administrator on its 13-member council.

3.1.2. Institutional Structure and Procedures

The network doubled in size, from four to nine centers. But there is strong evidence that the new set was more fragile. Either a strong initiator was not present locally or support from the school district was lukewarm. Also, these centers received less foundation funding than had the original four. Since local state colleges and school districts were bracing for budget cuts, the timing of the new centers was poor; they were perceived as future fiscal burdens during a tight budgetary period. Some local administrators questioned the "duplication" of training and documentation services already provided.

The overall coordination of the network remained fluid. Both Paul Saganne and Brenda Buckley called themselves "statewide network staff persons," but their roles were unclear. Saganne and the president of the policy board would confer by telephone prior to meetings. Centers having problems would also call frequently into North Central for advice or direct intervention. In the report to the Gibb Foundation for 1979-80, the coordinating roles for network staff included not only contacts between centers and the organization of statewide meetings, but also providing a "link between the state education agency and the centers" and "assist(ing) in writing proposals for funding."

As the state education office began to deal directly with the network, some fears were voiced of "getting bureaucratized." A recommendation by an SEA administrator on the advisory board that the network have a full-time coordinator at the state capitol was rejected energetically. It went against the ethos of decentralization and non-formalization of procedures.

The formal functions of these state-level boards remained the same. Essentially, they followed through on proposals made by individual centers and oversaw the distribution of funds.

3.1.3. Changes in Objectives

For the most part, the initial objectives of the network as a whole and of individual centers remained stable from the pioneering years. The network was to be a "human resource exchange," helping to value craft knowledge and to accelerate practice change. Teacher-defined needs were to be paramount at local centers. Similarly, the

network appeared to pursue its latent or implicit institutional aims of co-opting key educators across the state, increasing the impact of the Experimental Program philosophy and keeping that movement intact.

But there were some shifts. First, local coordinators began to report that they were doing less change-accelerating assistance and more organization of large-scale workshops requested by teachers, most of them for recertification credit. Several coordinators complained of being "sidetracked with workshops." Secondly, the network was promoting a preferential status for the centers as carriers of new state programs and staff development needs. Servicing local needs began to take fewer energies but remained the chief thrust - in proportion to arrangements for servicing state needs or state college programs, both of which brought in revenues.

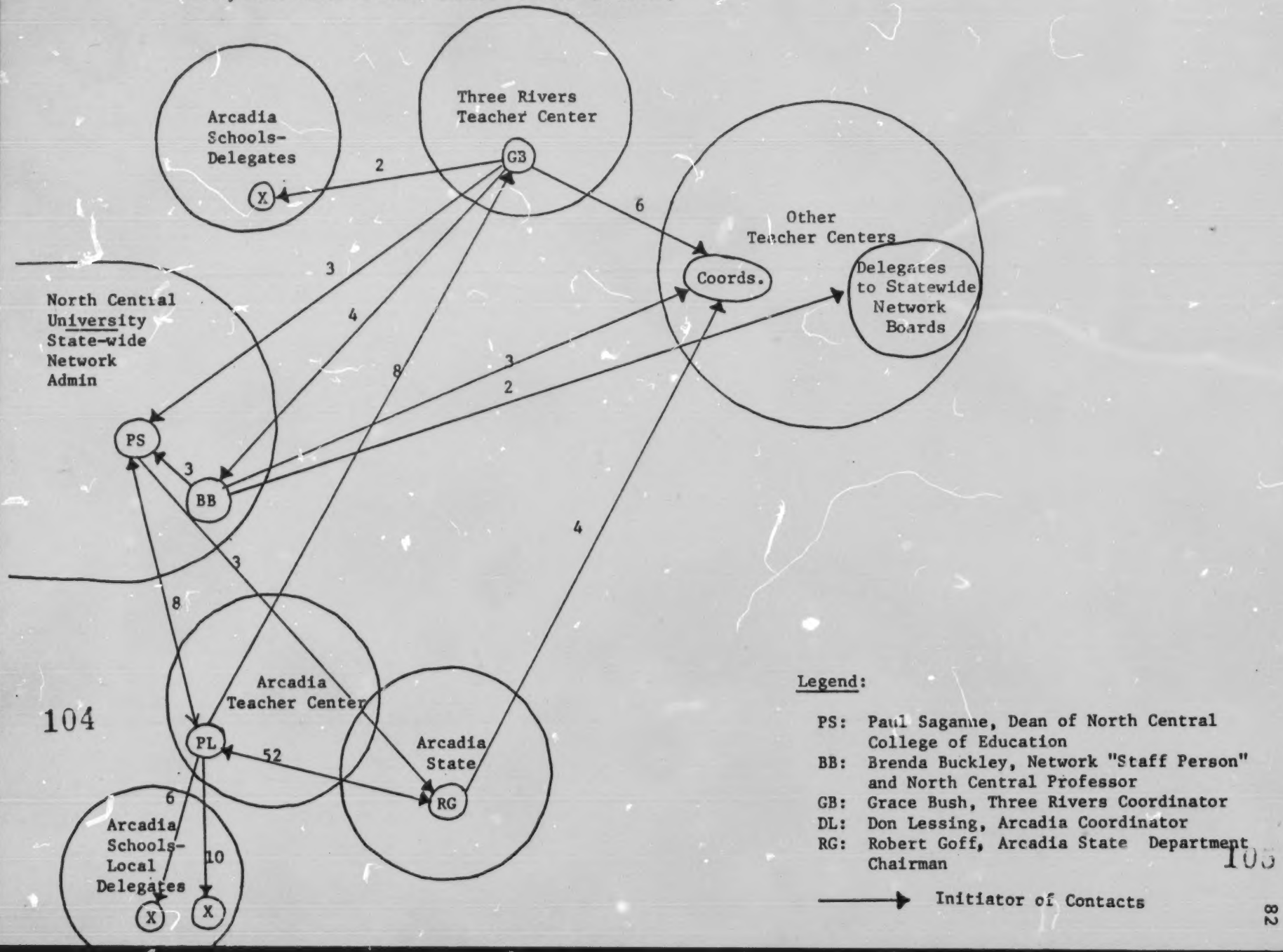
3.1.4. Key Persons and Relationships

At the network level, the two "staff persons," Saganne and Buckley, remained the key actors. They oversaw network operations, intervened to solve local problems, set the agendas and followed up on network business; they also did periodic lobbying within the state education office and within district offices connected to a local teacher center. Many of these contacts linked former staff and graduates of the Experimental Program.

In 1980-81, two names appeared with greater regularity. Harold Fine and Peter Handlin were senior administrators in the state education office and delegates to the network's decision-making boards. As the network grew, its appeal as a vehicle for delivering state programs and in-service requirements increased. As a result, more business was done between the state and the network via these two intermediaries. They also helped to line up support when the network applied for state and federal funding.

The role of Saganne and Buckley can be reconstructed in part with the aid of the following figure. Figure 3-1 shows the frequency and location of communications among key actors in the network, during one month. Responses for that month were gathered from the two network staff, Saganne and Buckley; from the Three Rivers coordinator, Grace Bush, and from three respondents at Arcadia State; Robert Goff, Don Lessing and one of the delegates to the local and statewide policy boards.

Figure 3-1 Frequency and Location of Communications Among Key Persons in Teacher Center Network (1 Month)



We save for later detailed comments on contacts within each functional unit. For now, note that Saganne had the greatest number of between-unit communications (17), most of them initiated by others. The content of these contacts was instructive. He consulted with Grace Bush at Three Rivers on how best to prepare for a crucial school board building. She also asked him for help in finding a bigger facility for the teacher center. Saganne discussed the agenda for an upcoming state-level network meeting with Buckley. He contacted Lessing to propose that Arcadia State get involved with an energy education program sponsored by North Central (which Lessing did), then trouble-shot a looming conflict within the network over the terms of service of delegates to the statewide policy board. In short, Saganne solved important problems and oversaw statewide network operations.

Buckley communicated outside North Central to the other teacher center coordinators and to the statewide policy board chairman on logistics for the upcoming meeting. She also acted as a sounding board (talking over new ideas for activity centers) and a liaison (North Central faculty input for workshops) for the Three Rivers Teacher Center.

Internal communication at Arcadia was the most intense, notably between Lessing and Goff, who (a) strategized on Lessing's request for more space, (b) planned the summer workshop series and (c) planned the extension of the nature study area. In short, Goff was actively involved not only in administration and budgeting but also in programming at the Arcadia Teacher Center.

Finally, between-center communications were frequent, notably between the coordinators at Three Rivers and Arcadia (eight contacts). It is noteworthy that Goff was active in this between-center networking. His four contacts with the Sunny Vale Center involved spadework on a collaborative project.

Key actors also kept a weekly log for a month by tallying the number of hours spent on various tasks. The results are shown on Table 3-1. The activity logs for Grace Bush at Three Rivers and Don Lessing at Arcadia State will be treated later; for now, note the prodigious activity in all categories of Lessing (total = 383 hours).

Table 3-1 Summary of Activity Logs over One Month for Key Persons in State and Local Level Teacher Centers

Statewide Staff		Local Coordinators		Activity
P.Saganne (1 week)	B. Buck-ley	Three Rivers	Arcadia	
	18	10	13 1/2	Attending statewide policy or advisory meetings
1		3	11	Doing budget and record-keeping in relation to center/network
1			15	Following through on requests for materials by consulting other teachers
		1	11	Following through on requests by consulting College of education
		2	10 1/2	Following through on requests by looking things up in journals or elsewhere
			7 1/2	Following through on requests for expertise by consulting other teachers
		1	9	Following through on requests for expertise by consulting college of education faculty
			8	Following through on requests for expertise by looking up in journals or elsewhere
	1		8 1/2	Following through on requests for information (books, articles, genl. information of substantive nature) by consulting other teachers
	1		10	Following through on requests for information (books, articles, genl. information of substantive nature) by consulting college of education faculty
		3	10 1/2	Following through on requests for information (books, articles, genl. information of substantive nature) by looking things up in journal or elsewhere

Table 3-1 continued

Statewide Staff		Local Coordinators		Activity
P.Saganne (1 week)	B. Buck-ley	Three Rivers	Arcadia	
1	1(20)	1	9 1/2	Contacting school officials (local, state)
				Helping to organize workshop:
		3	11 1/2	- substantive help
		6 1/2	6 1/2	- logistical help
		4	9	Giving a workshop
6		16	6 1/2	Preparing an intervention (workshop, talk, document, meeting)
			6 1/2	Scanning for expertise which might be useful for the center
			7	Contacting members of the network
				Helping to organize a project or program
		4	26 1/2	- substantive
		1	5	- logistical help
	3		4	Attending local policy board meetings
3			5	Attending a commission or working group meeting
		3	16	Working at center on future programs*
		4	2	Working at center on general policy*
1		10	11	Working at center on administrative or organi-zational matters*
			7	Working at center on relational/interpersonal matters
	1	2	4 1/2	Working at center on financial matters

Statewide Staff		Local Coordinators		Activity
P. Saganne (1 week)	B. Buckley	Three Rivers	Arcadia	
			8	Visiting schools
		3	13	Scanning for materials which might be useful for center
		4	11	Reading journals

*for key persons who are not coordinators, item was written "advising a center..."

Recall that Saganne was a full-time dean at the college of education. His log covered only one week, but he spent 13 hours on teacher center business. The topics are worth noting; they show his pivotal role in the network, in particular, his efforts to raise money and support. He worked on the following tasks:

- writing up and conferring with state-level officials on a proposal for SEA funding of the teacher center network (6 hours);
- meeting with SEA officials, teacher center coordinators and policy board delegates to map out the role of teacher centers in state-sponsored in-service programs (3 hours);
- advising the coordinator of one of the five new centers (1 hour);
- meeting privately with state officials delegated to the statewide network boards, along with one county superintendent, to discuss the teacher center network's proposal for federal funding(1 hour).

Buckley's time was spent predominantly in meetings and in handling ad hoc requests. She was active in the affairs of the local Three Rivers center. She also spent time contacting state education officials or hosting key state officials (SEA administrators, senior elective officials) at North Central (20 hours).

Another important feature associated with key actors in the network is their instability. In the two years covered here, staff departed or turned over at three of the four original centers. One coordinator reasoned that "burn out is pretty high, I think, among coordinators." This was attributed to the low salary, multiple demands, heavily interpersonal nature of most tasks and to coordinators' frustration with the displacement of goals from one-on-one consultation with teachers to the organization of large-scale workshops. Looking to the future, one coordinator said,

> I'm not sure you can get replacements of the same calibre. And if there's too much of it (turnover), a lot of the centers would just disintegrate.

3.1.5. Resource Changes

Field work followed the fourth and part of the fifth year of teacher center network operations. The leitmotif throughout was resource scarcity. As mentioned earlier, coordinators' meetings focussed on survival. Existing centers were worried about the transition

to local funding and new centers appeared to have rock-bottom budgets for initial programming. Also, Paul Saganne was scrambling for state and federal support which was, up to that point, elusive. Cutbacks were being projected in district education budgets which were likely to fall first on such activities as teacher centers which did not service school-age children or even the full population of district teachers. Finally, even if local funding for centers were found, the statewide network itself needed funds for its meetings, special projects and publications.

The fourth year was crucial because Gibb Foundation support dropped sharply, from roughly 50% of total coverage to 25% (see section 2.1.4). The original centers received $4,200, the five new centers $9,000 each. Funding for statewide network activities was at $3,500. For 1981-82, foundation support for the four original centers dropped to a token $1,000. The new centers received $8,000, but with no certainty of external support beyond that year. These reduced levels of funding had been anticipated from the outside, but the hoped-for replacement sources had not materialized. External funds were also needed to start up the two projected centers and to plan for two more.

Cutbacks elsewhere also affected network operations. Two of the "resource colleagues" were funded from federal projects that were either elimininated or reduced.

On the other side of the ledger, there was either resource stability or slight increases from some quarters. To list these briefly:

a. State colleges helped to pick up the slack, often by providing in-kind services, such as facilities, secretarial help and purchase of materials, which did not involve new budget outlays as much as plugging the centers into regular college support. As mentioned earlier, the marriage between teacher centers and state colleges had come to be seen as mutually beneficial. Workshop participants brought in funds to the college and helped set up a more intensive - and renumerative - in-service links between the state college and area schools. That three of the original four centers in the network had become affiliated with state colleges or universities was viewed as an important source of institutional survival. To quote D. Lossing:

> I'm skeptical about whether all the centers will be operating when the foundation money is gone. The first four, yes, they'll be O.K. They can get enough from the local colleges they're affiliated with.

b. The state educational agency began to contract directly with the network for local services, usually connected to in-service training. Two such projects (in-service training for drama, music and dance and for multi-age classroom teachers) were initiated in 1980-81.

c. In-kind services from local school districts (materials, facilities, release time) remained stable, and district funds kept up, globally, with prior commitments.

d. Cost-free workshops were prevalent in the network. Neither college-level workshop leaders nor teachers giving workshops asked to be paid. They constituted the mainstay of center activities

In 1980-81, requests for funding from the state and from the Gibb Foundation were unsuccessful. A fourth attempt at federal funding, however, seemed to be on the road to success, perhaps with the assistance of state education officials through whom such funds were to be channeled. Rumor had it that the network was likely to get $400,000 of its $500,000 request.

3.1.6. Teacher Center Network Activities

Activities are best handled at the level of individual centers (see later). Overall, the centers maintained a general format consisting of one-time workshops, continuous workshops, drop-in services, consultations and local problem-solving and special projects. When state colleges were closely linked to centers, some work was also done with pre-service students. In some centers (e.g., Three Rivers and Arcadia), staff did much of the substantive work themselves. In others (e.g., Sunny Vale, Savil), the coordinators acted as brokers or middle men by matching requests with sources of information and expertise. Finally, workshops leaders tended to be local teachers, state college staff or specialists from one of the district services, e.g., a psychologist from a local community welfare service.

Linkage between centers, along with their affiliation to the network, led to common activities and sources of knowledge resources. The local "resource bank" of local and regional specialists was sent

to the other centers. Some projects were run successfully in one center, reported on during a coordinators' meeting, then tried out elsewhere. Centers also collaborated on projects initiated by the SEA (e.g., in-service training of multi-grade teachers) or other state agencies (e.g., poets-in-the-schools project sponsored by the state Council on the Arts).

The concern throughout was that of extending local opportunities beyond what would have otherwise been available, and of doing it in another key. District-level in-service was considered to be token, not focussed on teacher-felt concerns and sometimes poorly led. The teacher centers tried to intensify teacher-requested activities and to draw on peer resources (other teachers) as well as community and state college resources. There were some local critics, like the superintendent at one of the new centers who said,

> We're spending a lot of money duplicating services that are already there. We're doing so much for in-service, we don't need any more.

It was difficult to disarm such critics in a lean budgetary period. One non-deliberate but effective device seemed to be that of playing on local pride. Since eight other districts had sponsored teacher centers, how could we refuse to offer similar services, especially when there was initial funding from without?

3.1.7. Social and Interorganizational Dynamics

Consensus was strong among members and representatives of diverse interest groups participating in the statewide network. Network objectives remained - perhaps deliberately - vague and generous; all parties found their chief concerns addressed therein. Delegates agreed to temper their local needs in the name of network-wide superordinate goals. As a result, resources were equitably distributed, although there were clouds on the horizon (see below).

An important trend during these years was the growing link between the state education agency and the network. After initial doubts, state officials came to see the teacher centers as ideal conduits for dissemination.

Consensus was also facilitated by decentralization. No central directives went from network staff to local centers. Coordinators resisted attempts to "rationalize" the network by appointing permanent staff. They also viewed the network decision-making boards as fairly

straightforward rubber stamps for proposals they had worked out initially among themselves.

Conflicts. The three issues raised during the first two years (see section 2.1.6) continued to be the chief source of the few conflicts registered in the network. Goal displacement from process consultation to workshop organization plagued coordinators, who saw administration as an unrewarding and distractive task. But they also saw that large-scale workshops were what teachers were requesting and brought in funds. The policy board affiliation had caused the first within-network crisis in the fourth year, when delegates from one teacher center used their experience and - perhaps illegitimate - reelection to increase special project fundings for their district at the expense of two others. The dollar amounts were trivial, but the precedent escaped no one's notice. When money was running out, statewide policy board members began inevitably to make certain their local center was solvent. Informants were already dreading what would happen if federal funding came through. The older centers had called for an equal distribution among all nine centers. The newer and weaker centers had asked for preferential support.

There was continuing concern over the perception that the centers were supplanting administrators in the conduct of in-service training. This was especially true of principals. The problem was not acute at Arcadia, where there had been almost no local provisions prior to the center. Three Rivers appeared to turn the corner; principals were now supporting the center more actively and turning to its resources for their in-service needs. Elsewhere, however, there was consensus that "a lot of the principals are against the center," as one coordinator put it.

Finally, some between-center competition began to emerge. Three centers lay in a 60-mile radius of one another, and found themselves recruiting through their newsletter the same, diminishing pool of in-service teachers. As enrollments also resulted in fees paid to participating colleges, there was added pressure on the centers to draw a large number of teachers. The same centers exchanging resource banks and tips on successful activities were competing with one another. There were some initial attempts to draw geographic boundaries, but they were unsuccessful; teachers continued to go either to the center connected to the college at which they had done their pre-service work, or to the center whose offerings were more appealing.

Bargaining issues remained the same (see section 2.1.6). The implicit agreement with the state education office was stronger now. On the other hand, local districts were finding it harder to keep their end of the deal. The knowledge resources being offered by teacher centers became less valuable as other, higher priority items were threatened by budget cuts.

Knowledge transfer is best handled at local levels. Overall, earlier patterns - between-center exchanges of resource files and promising ideas or projects, dissemination of state-level programs - continued in later years. Linkage roles played by coordinators varied from one center to another.

3.1.8. Barriers

As a loose confederation of local centers, bound by a common philosophy of teacher professional development, the state-level network functioned well. For some, it was little more than a vehicle for distributing external funds and for getting together with fellow educators. For others, it served to influence state-level educational policy and to accelerate local changes. For all parties, the only key obstacle was that of resources. The network needed funds to make up for foundation monies in order to support local centers and to continue as a forum and communications center.

At the level of local teacher centers, a common set of problems began to emerge:

- leadership problems. Coordinators complained of role overload, low salaries and substantive undernourishment in comparison to administrative burdens. Turnover was high. Some felt that one or two of the new centers had weak coordinators.
- policy and governance problems. The newer centers had trouble carving out their territory, and were uncertain of where to put their program emphasis. The sometimes cumbersome governance structures did not help. Support was weak in some of these centers from the school district.
- financial problems. The older centers had some difficulties moving over to local funding. Initial support levels for new centers were very low.
- clientele problems. No center was highly successful in attracting secondary-level teachers.

3.1.9. Facilitators

The same set as previously listed (see section 2.1.8) continued to apply. Two new items emerged: (a) stronger political and material support from state authorities and (b) growing visibility of the centers both locally and as members of a knowledge resource-rich network.

3.2. THE ARCADIA TEACHER CENTER, 1979-1981

3.2.1. Main Events and Institutional Context

No significant events marked the final 18-month period of study, nor did contextual properties change. Arcadia State remained a small college in a small rural town, with a focus on service and outreach rather than on academic excellence and prestige. There was, however, a tightening budget squeeze within the college owing to decreasing enrollments, as the birth rate declined and families moved to larger cities. Since the teacher center brought in funds for in-service credits and helped bring in education majors, it received strong support. This came in the form of increased space - almost a doubling of the present footage - and funds for a staff assistant. Also, the center enjoyed administrative flexibility that facilitated authorizations, switches of budget line items, hiring of staff and large-scale ordering of educational materials.

3.2.2. Institutional Structures and Procedures

The institutional nesting and operations of the center remained the same. Center staff had appointments to the Education and Psychology Department, chaired by Robert Goff. Since that department had overall responsibility for extension activities at the college, this was a logical assignment. Up to this point, the three staff members of the center were in the elementary education section of that department.

But if the structures remained constant, the size of teacher center operations did not. There was rapid expansion in virtually every sector - as rapid as the initial two years had been. This is especially striking in that the state, local region, and state college were all experiencing cutbacks. Below is a quick inventory of areas of growth between 1979 and 1981:

- program. New special projects were initiated and others planned: poets in the schools, energy education, nature studies, nutrition, multi-age classrooms, gifted pupils. Existing programs were expanded, e.g., eight summer workshops were given in 1980 (up from four) and 13 planned for 1981; the nature study area spun off self-guiding tours, canoe trips, cross-country skiing and follow-up activities.
- space. In doubling its facilities, the center added a large classroom and display area (40' by 20'), two adjoining classrooms for special education and physical education, a meeting room (with rugs, indirect lighting and armchairs) for nature study and another for energy

education, and a similarly furnished resource room for Indian studies. There were even plans to move the entire psychology and education department closer to the center. If this were done, the center would acquire still more space. There were plans for extending the center to include an art gallery for area pupils, teachers and residents.

- personnel. Gene Nickerson moved back to the main education building, but he and others continued to teach their courses out of the center. In 1981, a professor from the art department moved into the center to join Lessing, Smetana and a full-time staff assistant, Joy Willard.

- resources. The materials bank continued to grow, almost exponentially. A section of the main room was set aside for activity centers, of which roughly 15-20 were created in the fall of 1980 by pre-service students. People who had seen the center in its initial years were struck dumb when they walked in. For example, during an interview, the director of recruitment of the college looked around, then said:

> It really amazes me what they put together here. A few years ago this was just an old empty basement. And every year there's more going on.

The center also began to acquire some expensive equipment; canoes, 20 pairs of cross-country skis, a video camera and recorder.

- membership. The number of participating school districts rose from six to eight, with more requests pending. Membership increased proportionally on the local policy board.

- availability. Hours were extended to include three evenings and Saturday morning.

3.2.3. Changes in Objectives

The basic set of program objectives, listed earlier (see section 2.2.2), remained constant, but there were some shifts of emphasis. Overall, the center continued seeking

- to strengthen the pre-service program, including the placement of teachers;

- to enrich the general culture of teachers. This objective went underground in 1979-80, when the one-time workshop series was not given. There were plans to reinstate the series the following year;

- to increase the provision of local craft knowledge by increasing the stock of materials and emphasizing hands-on workshops. As Carla Smetana said:

> I really want to give to the teachers something they can use. I just don't want to give them something that they'll write down.

- to create professional exchanges. This was built into the physical setting, with its rugs, armchairs, magazines, coffee, informality, and staff conviviality. It was also a part of workshops. Informants invariably stressed the importance of this objective. An illustration from the field notes:

> She says, 'Teachers really need to have this bit of time when they can get together. When you come here, you can sit down and talk to people who are doing the same thing.' The Center seems to be one of the few places where teachers can conduct a professional conversation. It also appears to be an informal meeting ground for teachers who were either not trained together or teach in different schools.

- to service the surrounding community. This objective took on more importance. Aside from providing meeting space for community groups, the center began to reach out more actively. The nature studies project provided a community walking and skiing area. An art gallery planned for 1981-82 would display local work. A proposed micro-processor project would service area farmers as well as teachers.

- to bring about instructional change along the lines incorporated in the Experimental Program philosophy.

A final, previously latent objective began to emerge: that of altering some of the instructional practices at Arcadia State. Initially, center staff encouraged college personnel to use the center as a way of servicing the college or of gaining support for the center. There was now a more active attempt to nudge college instructors toward a more hands-on, materials-centered course format, and to promote cross-department teaming on special projects.

3.2.4. Key Persons and Relationships

The cast of main characters remained constant in the succeeding two years, with the exception of one departure (Gene Nickerson) and one arrival (Andrea Migros, from the art department), neither of whom was core staff. Lessing, Smetana and Willard remained the mainstays within the center and Goff provided administrative and financial help from the department. As discussed earlier and as shown on the map of communications relationships (see Figure 3-1), Goff and Lessing had numerous contacts of a substantive, administrative and tactical nature. There were also ongoing communications to the local policy board delegates of whom two served on the statewide policy board.

3.2.5. Resource Changes

In budgetary terms, 1979-80 was a swing year, during which external funding dropped by some 60% to $6,000 from $16,000. The Three Rivers center had almost gone under during this key passage, when the district administration recommended that the center be deleted from the district budget. There was apparently no such problem at Arcadia. The state college picked up the added $10,000 and prepared for the fifth and final year of external funding, when an additional $4,000 would have to be found from the state college budget. Goff handled the budget shifts with apparent ease.

The center was also acquiring resources, as the materials bank grew and more expensive equipment was purchased. In a resource-poor educational environment, these knowledge resources were particularly valuable. They far outstripped local provisions and, in fact, discouraged county administrators from purchasing materials since the center would provide them free of charge. As one teacher put it,

> We're all coming in from small schools with limited funds and we can't get the money to buy our own materials. What we get here is a central storehouse of all the things that we need. We can check them out and use them as we like.

3.2.6. Arcadia Teacher Center Activities

In the course of the two years under study, the center expanded its program formats, went after new clients and tried to extend the in-service function without sacrificing time or staff from the pre-service program. This usually entailed 75-hour weeks on the part of Lessing, and nearly equivalent amounts put in by Smetana, Willard and Goff. Both Smetana and Lessing held down full course loads, so that the teacher center constituted virtually another full-time job. In addition, they appear to have done most of the remodeling of the center (building shelves, scrounging furniture, lowering ceilings, setting up displays) with little help from college services.

Types of activities. The most useful way of cataloguing center activities might be that of keying them to objectives. Expanding slightly on previous lists (see sections 2.2.2 and 3.2.3), the breakdown can be shown as follows:

Objective 1: strengthen the pre-service program

Activities: stocking and lending materials,

Activities (continued):
one-day and two-week visits by area teachers during which interns worked with pupils while their teachers observed and browsed.

Objective 2: enrich the general culture of area teachers

Activities: one-time workshop series (not given in 1979-80) with such topics as snake-charming, poetry, ecology, interpersonal communications;
mass public periodicals in the center: National Geographic, Psychology Today, Time, etc.

Objective 3: disseminate craft knowledge and enlarge instruction repertoires

Activities: one-time workshops, e.g., on recycled materials;
summer workshops, e.g., on reading in the content areas, nature studies, working with gifted pupils;
drop-ins and materials lending;
special programs, e.g., poets in the classroom, nature study, nutrition.

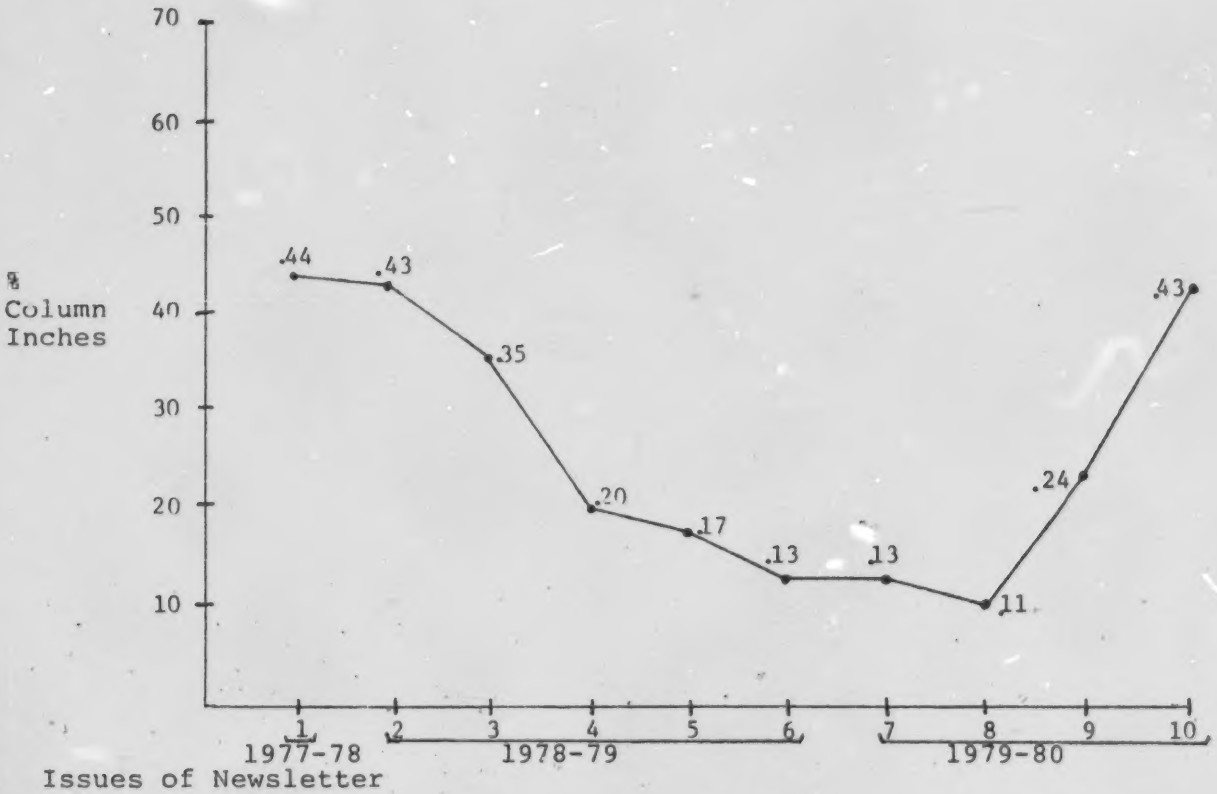
A short commentary is warranted here. This category accounted for the greatest inputs, particularly the ordering, displaying and lending of materials. In 1979-80, about 2,000 items were lent, ranging from an activity kit to an entire reading series. The "ideas" section of the center was also a frequently visited resource. A walk-through of the central resource room is given in Appendix 1.

In its newsletter, the center played up its stock of instructional materials. Of the 10 issues analyzed between 1977 and 1980, the greatest number of segments (36) was devoted to listing these materials and inviting teachers in to examine them:

> Come. . . . make use of the center's many kits, materials and other resources.
>
> Teachers left the center with valuable materials and ideas for their classroom.

In the early issues of the newsletter, nearly half the segments dealt with the center's stock of materials. This tapered off in 1979, then rose again in 1980. Of the total column inches in the 10 newsletters, references to materials acccunted for one-fourth (.26), considerably more than in newsletters from other centers. These trends are shown below.

Figure 3-2 Column Inches Relating to Materials as a Proportion of Total Column Inches in the Center Newsletter over Three School Years



There were two modal times for borrowing materials. First, when teachers were to take up a new topic or activity in the coming few days and called or came into the center for suggestions. What seemed particularly effective here was that the center staff knew both the caller and the resource bank, so that the contacts turned into one-on-one consultations. Secondly, when teachers were planning a new or enriched unit in the upcoming fall or spring quarter and contacted the center well in advance. In both instances, requests often turned around areas in which teachers felt weak, either substantively or instructionally.

To judge from respondents' comments, the wealth and variety of materials were the center's strongest drawing card. Two representative excerpts :

> She says that she doesn't need any contract credits but that she's coming back (to the center) all the same. 'I'm already looking forward to it. I'm very enthusiastic about it. When you're there, you feel like a little kid in a toy store. There are just so many ideas and materials I get excited, and they keep adding to them.'
>
> You can see what material there is and how it can be used. A lot of teaching is really providing extra things for the kids. Here you can try things out and see them, so you're not wasting time or money ordering from catalogues.

Objective 4: create exchanges among teachers

Activities: summer workshops,
drop in

A brief note here as well. The Arcadia center did not have "sharing evenings" among teachers of a same grade-level or subject matter as were held at Three Rivers. Rather, the organization of the center and the emphasis placed by center staff on informality, conviviality and personal concern all encouraged lateral communication during workshops and drop-in. The center was also a "home" for cohorts of pre-service teachers now dispersed throughout the region and keeping in touch via visits to the center. Paradoxically, the newsletter features contacts made in the center but not continuing links between teachers after visits to the center. There is little emphasis on networking among teachers not directly mediated by the center; only four segments in the ten issues refer to between-teacher exchanges.

Objective 5: involve the community

Activities: holding meetings of community groups at the center,
nature study area;
(proposed) micro-computers for farmers;
art gallery for area residents

Objective 6: bring about instructional change

Activities: drop-in and materials lending;
workshops: nature study, energy education;
activity centers;
one-day and two-week visits, during which interns modeled new "strategies" and techniques;
individual consultations for teachers and administrators;
one-week practice improvement summer workshop

This objective overlaps with #3. Most of the workshops entailed the use of new materials, the expansion of ongoing curriculum units or the introduction of new ones. What these offerings had in common was an attempt to individualize instruction, give more self-direction to pupils, put the teacher in a more "facilitative" - and less directly instructional - role and/or integrate curricula. Simply by virtue of using the center's materials, many teachers reported such changes in their classroom. But, as mentioned earlier, there were activity formats aimed explicitly at facilitating practice change in these directions: the one-week workshop during which a project was designed and carried through when teachers returned to their classrooms; the integrated curricula proposed in the activity centers housed in the main resource room, the two-week visits by area teachers who observed new (to them) diagnostic and inquiry techniques, along with group and individualized instruction; and the personal consultations. Another formula used in the one-day visits allowed teachers to specify areas in which they wanted to see materials used or techniques modeled. They would typically leave the center with these and other materials collected during the visits.

The two-week visits also helped teachers to get distance on their own work, which often led to instructional modifications. Several informants spoke of using the visits to "get some detachment" or "get some perspective on what I've been doing."

> D. Lessing: They spend a lot of time thinking critically about what they're doing with kids and about what they're really after. They don't get too many opportunities to get any distance on their work at the same time that they're involved in teaching.

Objective 7: help with individual problem-solving

Here again there is overlap with #3 and #6. Lessing and Smetana spent considerable time helping teachers with problems going beyond materials, such as discipline problems or poor relationships with pupils and peers. Many, but not all of these requests came from former pre-service students who knew Lessing and Smetana from their intern period. Here are two excerpts from field notes that point up both the class of problems handled by teacher center staff and the procedures used for problem-solving:

> She took workshops in math and reading, saying that she also copied down ideas in other areas in which she felt weak. She also talked about her problems with Lessing and Smetana, which she says many Arcadia State graduates do. 'You know the people and you know what's there. It makes it easy to come in . . . I feel a lot stronger now because of Don (Lessing). He really helped me out with getting things.'
>
> She tells me an anecdote about a little girl in her class who screamed whenever she was upset. Miss X went to Lessing ('I'm used to Don. I can go easily and ask him things') then read some things on social behavior which Lessing had suggested. She resolved the problem by setting aside special times in the day when she would work with this child and by being very attentive when group activities were going on. This solution came from Lessing and the materials he recommended, but also from the precepts on individualization which Lessing had taught her during pre-service training.

Objective 8: change instructional methods in college-level instruction

Activities: materials lending;
special projects;
use of the center for course instruction.

As mentioned earlier, this objective became stronger as the center came to be on more solid institutional footing. Materials were bought, equipment leased or bought and new rooms set up so that staff members in the education department and in other departments could teach out of the center. In so doing, they too relied more heavily on a hands-on approach as Lessing himself had done. Through special programs, Lessing and Goff also created cross-department teaching and development work with staff from physical education, special education, science, music, art and early childhood education.

One rough estimate of the relative frequency of events is provided by tabulating listings from the newsletters. The breakdown is the following:

Event type	Proportion of Total
Visit to the center (with class)	.28
Workshop	.27
Activity linked to pre-service training	.20

continued:

Event Type	Proportion of Total
Conference	.13
Special project	.07
Meeting	.03
Visit elsewhere(Canadian school)	.01

Activity formats. Taking all activity types listed in the newsletters over a three-year period, the durations vary as follows:

Duration	Proportion of Total
One-time visit or workshop	.60
One-two week activity	.20
Series or continuous activity	.12
Workshop + follow-up activity	.08

Frequencies tabulated from newsletters may not match actual frequencies. In particular, the newsletter may have been a medium to reach a large public for the larger-scale events, such as the one-time workshops. Also, drop-ins and materials lending are not covered here. Taken at face value, this distribution is not far from the pattern at other teacher centers in the network, with the exception of the workshop plus follow-up which typified the Arcadia approach to practice change.

The one-shot workshop series was also a recruitment device. Teachers came into the center, saw the wealth of materials, browsed and possibly borrowed one or two items. They then looked more closely at future issues of the newsletter and enrolled in one of the one-week summer workshops, then brought their pupils in for the two-week cycle. This was a very common scenario in the interviews, ending with routine use of the center on a yearly basis.

Another, possibly more meaningful way to look at multiple use is to note heavy users' reasons for calling on the center. Here is an illustration:

> Let's see. I use the center as a resource for new materials. It's a place to take my children for new activities and experiences. It's a place to go for help and to get information. . . . I use it to feel I'm an O.K. teacher . . . It's a place I go for professional exchanges with other teachers and with the staff there.

Selection of activities was an interactive process, with the initial impetus coming from center staff. To take the summer workshop series as an illustration, the initial list seems to have come from Lessing and Smetana after some informal consultation with area teachers. These proposals were discussed by delegates to the local policy board, then discussed during faculty meetings at local schools. Delegates brought back comments and counter-proposals and a final list was drawn up. Looking over the 1979 topics - nature studies, energy education, reading in the content areas, reading for the gifted - the imprint of the center staff is strong. These are all areas in which Lessing and Smetana have special skills and some commitment. As Smetana said of the reading workshop in content areas (with an appeal to secondary-level teachers), "I really encourage this because I think it's important."

Workshop leaders. As mentioned earlier, Arcadia differs from the other centers in that teacher center staff did most of the teaching and virtually all the direction of visits, special programs and drop-ins.

Content analysis of the newsletters bears this out. Below is a listing of workshop leaders - both one-time and week-long - expressed as proportions of the total number of segments mentioning the name or institutional affiliation of the leader:

Table 3-2 Sources of Expertise for Workshops and Courses at Arcadia

Source	Proportion of Total
Teacher center staff	.45
Specialists from within the state	.16
Arcadia state college staff	.06
Staff from other college/universities in the state	.06
Specialists in the immediate vicinity of the center	.06
Specialists from outside the state	.06
Local teachers (in one of the eight districts belonging to the center)	.04
Teachers from elsewhere in the teacher center network	.02
Teachers from outside the state	.02
College/university staff from outside the state	.02

continued:

Source	Proportion of Total
Teachers with specializations from within the state	.02
Teachers with specializations from outside the state	.02
Local teachers with specializations	.00

The breakdown is instructive, although here again the listing in the newsletters may not mirror the actual distribution. Most expertise is from within the state, the largest amount coming from teacher center staff. College and specialized instructors outnumber teachers, who act seldom as workshop leaders. The statewide network does not appear to provide many workshop leaders, but this is hard to determine; leaders from another college might have come through recommendations made by other teacher center coordinators.

It is worth noting here that the newsletters mention few alternative activities held at Arcadia State and virtually no other teacher center activities (a Good Apple workshop at Sunny Vale is the only item in ten issues). The state-wide network is mentioned infrequently (five segments), as is the local center; its governance or decisions are mentioned only three times in the 10 issues. It may well be that the local policy board delegates serve this function better than media.

Attendance at teacher center activities continued to climb. In its yearly report to the Gibb Foundation, the center lists 2,853 participants and visitors, many of these repeaters. Lessing estimated that about 75% of the teachers in member districts had used the center at least once. Of these users 70% were primary school teachers and 30% secondary-level teachers. Working again from this pool of 140 teacher-users, Lessing guessed that two-thirds were "frequent or systematic" users.

The yearly report also contains a chart of materials, books and learning packages checked out by month during the school year. No other center reports on materials-lending, which points up the particular focus of Arcadia. The total comes to 5,160, with peak months (over 800 items borrowed) in June, September and October and slack months (100-175 items) in December, April and May.

3.2.7. Interorganizational pynamics

Consensus. This phase appeared to be as relatively conflict-free as the initial two years. There was strong goal congruence between the parties constituting the teacher center. Both district administrators and teachers valued a materials-based, practice-focussed approach to in-service. Arcadia State defined itself on its logos as a "school of personal service," meaning that it primarily trained future educators and that it was oriented toward community welfare improvement. The center met strongly felt local needs and did it for virtually nothing.

Within the college, there seemed to be little friction. The center had institutional legitimacy; it operated out of a department which had overall responsibility for extension activities. These activities were increasingly viewed as sources of funds and of continuing community support. There began to emerge, however, some initial rumblings of intra-college dissent as the center extended its space and programs into areas other had laid claim to. For instance, there was muted protest from one department over the energy education workshop given by non-specialist staff - the first instance of domain dissensus registered at the site.

Conflict. Table 3-3 shows the parties, issues, resolutions and effects of conflicts at the Arcadia site. There were few, and none appeared to be major. Two of the three conflicts had to do with inter-institutional rivalry. Arcadia State resented what it saw as a "power grab" by North Central, which had adopted many of the Arcadia teacher center formats, then offered post-graduate credits through extension for in-service teachers. Arcadia State had no M.A. certification and could not compete. Here, as elsewhere, the response by Goff and Lessing was not to protest but rather to outperform competitors. Thus the proposal of an M.A. degree program for elementary education at Arcadia State.

Similarly, Arcadia found itself competing with three nearby teacher centers - at Weston City, Three Rivers and Sunny Vale - for teacher enrollments. There was an embryonic attempt at boundary-fixing, but more energy was put into improving offerings at the Arcadia center. Both these conflicts show the ambivalent relationships among teacher centers who shared ideas, projects and funds as partners in the state-wide network yet competed with one another for participants.

Table 3-3 Conflict at Arcadia

PARTIES INVOLVED	ISSUE	HOW RESOLVED	EFFECTS +	EFFECTS -
Within the Network				
Arcadia State and North Central University	Perception by Arcadia of unfair competition for resources	Left latent; Arcadia State proposes own graduate program	Planned Extension of Arcadia State programs	Residual bitterness at Arcadia
Arcadia and neighboring teacher centers	Competition for pre-service students and for enrollment at teacher center workshops	Tacit open competitor; initial attempt to demarcate boundaries between centers	Stimulus to improve offerings at Center	Ambivalent relationships
Between local IOA partners				
None apparent				
Within College				
Teacher center and other departments	Emerging dissensus over center's substantive expertise in non-education areas	Not yet crystallized	Sensitization to need for within-college diplomacy	Perceived as "envy"
Within school district				
None apparent				

The final entry, within-college conflict, shows the darker side of successful institutional expansion by one unit at the (perceived) expense of another.

Bargaining and exchange issues. These issues were sketched out earlier (see section 2.2.6); they are shown in Table 3-4 in more detail. In all cases, there was more a tacit, often fuzzy agreement than a series of codified exchanges. The first bargaining issue points to the - apparently asymmetric - reciprocity between county administrators and the college, with the former getting a huge storehouse of knowledge resources and free consultation in return for little tangible payment. But the college profits indirectly by bringing in greater revenues, expanding its portion of the potentially lucrative extension services market and by shoring up political support in the area for future use.

Exchanges between the teacher center and area teachers were more subtle. Multiplying contacts between pre-service and in-service teachers helped with placement in a very tight job market. Job placement in turn eased recruitment of new students. Center personnel legitimated their areas of concern, activism or specialization by showing that policy board delegates had approved them, although these were, in fact, topics in which area teachers had little expertise and wanted more. Contract recertification could be had through the center conveniently, without major effort and in areas of real practical concern to teachers. Center staff derived greater resources and expertise and enhanced their institutional position within the college.

Finally, bargaining between, on the one hand the center and its department chairman, and on the other, the college administration, may have been more out in the open. Several informants (on both sides) mentioned that the center had brought in revenues, attracted high school seniors and enhanced the prestige of the college. The director of recruitment was straightforward:

> This is one of our high points for showing high school seniors around. We always bring them over here (to the center) if they're undecided. They're very impressed.. They like the informality and the friendliness of the staff and they see this incredible resource library and they find out they'll be working directly with children here...plus the low teacher-student ratio...If we get a student who's interested in Arcadia State and some other place, we'll bring him here and nine times out of ten he'll decide to come here.

Table 3-4 Bargaining-Exchange Issues at Arcadia

Parties Involved	Exchange	Institutional Consequences	
		College of Education	School Districts
Teacher center and school district	Center provides free knowledge resources in return for in-kind services(release time, free transportation) from district	Gets revenues from in-service credits; Greater focus on extension activities; Political support from community	No obligation to provide in-service training; No obligation to purchase expensive materials
Teacher center and area teachers	1. Center provides locus to bring children, observe new methods; in return, teachers help with placement of pre-service students	Increases competitive advantage in placement; Eases recruitment of future teachers;	Access to materials and opportunities to observe new practices
	2. Center gets to intervene in areas it considers important (nature study, energy, reading in content areas); in return teachers can order materials, get personel consultations	Growth in priority areas, greater local impact	Wide choice of resources
	3. Center provides certification in return for credit fees, enrollments, enhancing department's status	New source of revenues; Growing materials base and expertise	Nearby, extensive facilities for recertification
Teacher center and college	1. Teacher center brings in extension revenues, strengthens recruitment of new students; in return, college provides space, administrative flexibility, coverage of salaries	Competitive advantage over neighboring colleges/universities	
	2. Center provides materials, facilities,equipment to other college staff in return for within-college support	Improved instructional practice, lower probability of conflict	

Similarly, people who questioned the success of the center or the pre-service program were told that "they just have to take a good look at the pre-registration figures" for freshmen. And in recounting his negotiations over increased support for the center with the college president, Robert Goff went through the list of bargaining points; the special program and the money they have brought in, the service orientation of the center, stable recruitment of freshmen among a fast dwindling pool, the innovative role of the center in its pre-service formats, the emerging statewide reputation of the center, services provided to other college staff through the center, etc. This usually had the desired effect.

Finally, there was implicit reciprocity between center staff and other college staff who drew increasingly on the materials, equipment (e.g., video camera and recorder for playbacks in physical education) and the physical facilities of the center. These users were gracefully coopted, so that they not only repaid the center by supporting it in intra-university haggling but also, to some degree, identified with it as a resource for their own teaching.

Knowledge transfer. The role of the teacher center is best divided into five somewhat overlapping categories: the types of knowledge mediated by the center; the forms in which such information and expertise were packaged; the validation basis; the uses to which knowledge was put on the part of school-based people and the various linking roles and functions performed by center staff.

Knowledge types. Field notes and documents were initially coded for seven global knowledge activity types. A breakdown of these types by degree of frequency in the 10 newsletters is revealing:

Table 3-5 Frequency of Different Knowledge Types Underlying Teacher Center Activity (from 10 Newsletter Issues)

Type	Proportion of total segments
Craft knowledge	.39
Ideas	.23
General Culture	.19
Technical Expertise	.15
General Professional Exchange	.03
Research Knowledge	.01
Inspiration	.00

Again, actual frequencies across the different center activities may be different than announcements of activities and reports about them. Also, this table is more conceptually muddled than the following one. But the general distribution shows the primacy of craft knowledge (teacher-made products, theories, techniques) over, say, research knowledge. The one segment of research knowledge related to a presentation by a special education professor. Ideas (activities that might interest pupils or have been judged by other teachers as effective) were also knowledge items played up by the center. General culture refers to the one-time workshops on energy, ecology, Nazi Germany. Technical expertise involved products or presentations given by recognized 'experts' in a substantive field (e.g., children's writing, precision teaching).

Table 3-6 takes a more conceptually rigorous look at the various products and practices mediated by the Arcadia and Three Rivers Teacher Centers and at their validation bases. The estimates, however, are less precise. The table takes in the entire range of servcies performed by the centers both for area schools and for the state college or university.

Looking first at the distribution for Arcadia, products and practices that are commercial took the lion's share. These were the kits, prototype materials (integrated curriculum units) and media in which the center was so rich. Some of these materials had been more rigorously designed and elaborated, with provisions for pre-testing and local adaptations. They figure in the first column, along with the inputs from the college staff (e.g., diagnostic batteries, strategies of teaching) that reached an in-service public. Fewer knowledge inputs came from teacher-made materials (10% of the total) and from teaching methods and materials devised at the college (15%). Note that differences between Arcadia and Three Rivers reside chiefly in the proportion of home-grown products and practices, which reflects in the Three Rivers program objective of emphasizing craft exchanges between teachers.

The second half of the table shows the basis on which the person mediated activities (workshops, observations, consultations) were based. Here, differences between the two centers are sharper. At both centers the amount of research-based or scientific knowledge was low. This refers to data based on quantitative measurement, repeated

Table 3-6 Distribution of Forms and Validations Bases of Knowledge Resource Transmitted by the Arcadia and Three Rivers Teacher Centers (% of Total Estimated)

Knowledge Resource Base / Locus	PRODUCTS AND PRACTICES				VALIDATION BASES		
	Research and Development Based	Developed and Tested at College of Education	Commercially Developed	Home-grown	Expert-Approved		Craft, Consensual
					University	Other Specialists	
ARCADIA	15%	15%	60%	10%	70%	15%	10%
THREE RIVERS	10%	10%	35%	55%	20%	35%	40%

scientific measures or re-evaluated evidence, such as the sociograms and diagnostic batteries used during the visits of area teachers and their class to the Arcadia center. At Three Rivers, the introduction of the micro-computer (see later) was an example of a science-to-craft process leading from the research focus of an unviersity-based mathematics professor to widespread use by area teachers.

Because the Arcadia center was so closely tied to the college and because the center's face-to-face activities were mediated heavily by college staff, the proportion of university-based validation is higher than at Three Rivers, where the university played a far less prominent role. However, these proportions are reversed in the next column, reflecting the recourse at Three Rivers to specialists in the community. At Arcadia, these substantive specialists came often from outside the region (e.g., workshops on precision teaching and children's writing). Finally, there was less practitioner-validated knowledge being circulated at Arcadia than at Three Rivers, where teacher-led workshops and "sharing" sessions between practitioners were a core component of the teacher center program.

Knowledge use. Table 3-7 shows the distribution of uses to which knowledge resources were put by participants at the two teacher centers. In both cases, the practical dominates the theoretical or reflective. Both centers focussed on problem-solving and enrichment of current practices, notably in the provision of workshops or projects allowing teachers to become stronger in weak areas. Arcadia was more active in teacher problem-solving through its consultation mechanisms and slightly more focussed on accelerating in instructional practice changes among its population of teachers.

Table 3-7 Use of Knowledge Resources by Teacher Center Participants at Arcadia and Three Rivers (Estimated % of Total)

Types of use	Arcadia	Three Rivers
General knowledge	5%	5%
General personal/ professional growth	10%	10%
Improved understanding of work situation	10%	10%
Solving particular problems or class of problems	25%	15%
Reinforcing existing practices	25%	40%
Adopting new practices	25%	20%

Linkage roles and functions. A final way to examine the knowledge process at the centers is by cataloguing the roles performed by teacher center personnel in linking users to knowledge resources. Coordinators played other boundary-spanning roles than those surrounding center services. For example, they carried on or facilitated negotiations between the school district and College of Education by virtue of having one foot in each universe.

A catalogue of linkage functions, together with estimates of levels of investment and perceived success for Arcadia is shown in Table 3-8. What leaps out is the difference in relative investments made by the center staff in the college and in the school district. The college was clearly on the delivering end of the knowledge transfer process and the school districts on the receiving end. But the fact that college staff outside the Arcadia center was even a periodic target public is significant. Almost none of the comparable functions were performed for the university by the Three Rivers center staff (see later), where the center was both physically and institutionally distal from the College of Education. It was called on for very marginal tasks, e.g., advising college staff on the best format for a new program directed at teachers, providing some additional resource materials for coursework.

Looking at the second groupof columns, functions performed for the school district public were heavy in most categories. The fact that the Arcadia center was foremost a materials bank explains the heavy emphasis on resource transforming and delivery. The hands-on, change-accelerating foci of the center account for the prominence of the implementation helping role. The direct training function, performed by Lessing and Smetana, notably in the summer workshop series, was also central. Much of the center's success, in fact, may have stemmed from the multiplicity of linkage roles performed by its staff. Not only was center staff versatile, but it also performed multiple functions for the same set of area teachers who borrowed materials, attended workshops, consulted with Lessing and Smetana, and brought their pupils in to observe new practices performed by teacher interns, etc. As teachers used the center for these multiple purposes, they (a) treated the center as a core part of their yearly professional activity and (b) engaged more consequentially in practice changes.

Table 3-8 Linkage Functions of Boundary Personnel: Arcadia

Functions	UNIVERSITY AS USER		SCHOOL DISTRICT/TEACHERS AS USERS	
	Investment by linker	Perceived success (users' judgment)	Investment by linker	Perceived success
1. Resource transforming for potential users (packaging, synthesizing, making easily available and usable	Moderate	++	Heavy	++
2. Resource delivery: searching, retrieving based on user needs; passing on, informing, explaining	Minor	+	Heavy	++
3. Solution giving: advising, encouraging adoption of idea, product as a solution to user problem	Minor	++	Moderate-Heavy	++
4. Implementation helping: supporting user's efforts to build knowledge into ongoing operations	Minor	+	Heavy	++
5. Process helping: listening, encouraging, talking through problems	Minor	+	Moderate	++
6. Direct training: giving workshops, classes, courses.	N.A.	N.A.	Heavy	++

Investment	Perceived Success	
Heavy	++	very
Moderate	+	moderate
Minor	0	negligible
None	-	unsuccessful

That all these functions were performed essentially by three people (Lessing, Smetana and Willard, the documentalist) attests to the time commitments involved. Looking back at Table 3-1, from which the linkage function estimates were partially made, the total number of hours (383) for one month reported by Lessing has to be an exaggeration. But on-site observations and interviews with other respondents suggest that something like 42 hours a week (168 hours per month) was a reasonable estimate for Lessing and Smetana. Remember that this is in addition to coursework for pre-service teachers. About one-third of that time involved following through resource searching for users that make up the first five categories of the linkage functions table. Workshops and special programs would also come under these categories and accounted for 17% of the monthly total. Direct training, heaviest in the summer months, was low (4%) in the month during which activities were logged (October).

That the evaluations made by users were so positive is best discussed in the section on outcomes (see later). This is clearly an exceptional case. Note for now that the Three Rivers data are also positive but far less extreme.

3.2.8. Barriers

Of the four barriers appearing during the first two years (see section 2.2.7), three were corrected in the following period. Skepticism on the part of state college staff declined precipitously as teacher center activities mushroomed, participation grew and college staff became themselves users or sources of expertise for the center. Partially as the result of the center's expansion, a new problem began to emerge, domain dissensus. As mentioned earlier (see section 2.2.6, under "conflicts"), other departments began to monitor more closely the trespassing of center staff on substantive territories claimed by the science or social studies or math departments. The strategy adopted by Lessing and Goff, and which was largely successful, consisted in coopting college staff by providing services for them at the center or by associating them with workshops and special projects.

Problems of initial dispersion were resolved as center staff evaluated their activities. The center did not appear to reduce its format, with the exception of the one-time workshop series, but rather to reinforce existing workshops, program and resources. In virtually all cases, first-year activities were continued during the

third and fourth years, but each was more elaborate. Clearly, this could not have been done without the heavy time investments on the part of center staff which are reflected in the activity logs.

Gaps in the resource bank were progressively filled, but remained slightly wider for the secondary school public, whose lower participation remained a problem. Informants came up with a variety of explanations:

> Secondary teachers just don't think the center is geared to them....there aren't enough materials for them yet....they don't need a lot of materials; their textbooks and manuals are pretty comprehensive...they move around the state more than primary teachers....they don't get together very much between themselves. If a primary school teacher comes back and says, 'Hey, I saw some good math stuff at the center,' a lot of teachers will be interested, but there's maybe only one or two other math teachers at the secondary schools.

There is evidence that the center was aggressive in seeking to attract secondary-level teachers by inviting them to order materials, by organizing workshops aimed at the post-primary level (e.g., on reading in the content areas) and by personal contacts.

3.2.9. Facilitators

In section 2.2.8 we looked at the set of factors facilitating the implantation of the teacher center at Arcadia. In treating the later years, facilitators are more important in the ways in which they contribute to outcomes, both intermediate (e.g., budget increases) and ultimate (e.g., practice improvement, institutionalization of the center). Because so many of these factors are interrelated and contribute to several outcomes, facilitators are best studied in the more complex causal network (see section 6) drawn for Arcadia. The network tries to identify the key antecedent and intervening variables, then chain them to the core set of outcomes identified in the study.

For now, we shall take up a smaller set of facilitating factors, those identified by site informants. This excludes analysts' recommendation and highlights the more phenomenologically salient factors which informants came up with when asked to explain why they felt the center was successful, why they used it or what they liked about it. These factors are shown on Table 3-9, which lists the factors mentioned, and translates them into the intervening and outcome variable labels used on the causal network.

Table 3-9 Facilitating Factors Mentioned by Respondents and Their Institutional Effects: Arcadia Site

Locus and item	Variable label and number (from causal network)	Institutional effects (from causal network)
Characteristics of college		
small scale and rapidity of decision-making	scale of site (4)	extension of craft-usable resource base (18) greater variety of activities perception of center responsive- (17) ness to user needs (24a)
priority of service objective	university service centrality (5)	increased coordinator energy (19) strong university support (32)
staff background characteristics	goal congruence(11) univ. service capacity(5)	more university support (32) more intra-university links (43)
Characteristics of teacher center staff		
practical focus	coordinator homophily(7) coordinator ideology(6) perceived responsive- ness(24a)	more extensive use by teachers (24) perceived centrality of center to core teaching functions (29) perception of practice improvement(51)
familiarity with resource base	perceived responsiveness (24a) coordinator homophily(7)	more extensive use (24) perception of greater professional capacity (50)
personalism, warmth, affective closeness	coordinator ideology(6) informality, intimacy of center(20)	stronger teacher support (28) greater practice improvement (51)
Teacher center operations and facilities		
materials bank	craft-usable resource base (18) (low)access to alternative knowledge resources (14)	more extensive use (24) greater degree of teacher dependency on center (26)

Table 3-9 continued:

Locus and item	Variable label and number (from causal network)	Institutional effects (from causal network)
rewards for participation	perceived school benefits (16)	center seen as institutional priority by schools (44) more extensive use (24)

The small scale of the site was an important causal variable. Basically, it contributed to multiple college-school district contacts and to the commitment to local service on the part of the college. But respondents within the college, notably teacher center staff, tended to emphasize the smallness of scale of the college itself as a facilitator for programming and operations. Requests and authorizations were turned around rapidly, often with one or two phone calls. The authorization process for assigning and refurbishing the basement space in the old main building (see the "new room" serial in section 5) was completed in two weeks:

> D. Lessing: Basically it just took a few calls. But if we'd been in one of the state universities, it would have taken a good year of committee meetings and administrative memos.

The effect of rapid authorization was an extension of the center's resource base, a further variation in activities and satisfaction by users who perceived the center's extension of its meeting space and displays as a response to their requests.

Several informants at Arcadia State underlined the priority of service objectives at the college and the resulting college support for the center. Below are two representative excerpts:

> Math professor: We call ourselves 'a school of personal service' and the president really pushes that...There's no pressure to publish. If there's any pressure at all, it's to do service, to set up activities. That's really connected to the philosophy of the place...You might get (teacher) centers like this one at the big universities, but it'd be mostly window-dressing. There wouldn't be much going on.

> D. Lessing: you'd have more trouble starting up and getting support for a teacher center in a college that puts a big emphasis on publishing and research. I don't have that problem. I don't have that pressure here.

As a result the institutional legitimacy of such a service/outreach enterprise as the teacher center was assured and there was little role strain for center staff who could channel their energies into hands-on, in-service work without having to meet other institutional agenda and with the expectation of receiving institutional rewards for services rendered to practitioners.

The relative homogeneity of staff characteristics at Arcadia was often evoked. The majority of staff members had been former teachers. This facilitated communication among them and made outreach and service to local schools an institutionally congruent objective. Here is an excerpt from an interview with a professor of mathematics at Arcadia State that captures the dynamics of background homogeneity:

> The first thing that entered my mind (when I first saw the center) was a vision of a whole row of micro-computers back against the wall in the main room that school teachers and children could use...But if I hadn't been an educator, I probably wouldn't have thought of that kind of thing at all.

Teacher center staff characteristics have been catalogued earlier. To review briefly, respondents often stressed the practical focus of center staff. An illustration:

> Those people who run the center are a key to its success. They help you a lot. They're down to earth; they know what teachers want and they can get it. And they have a lot of ideas.

That center staff had themselves been teachers and were committed to helping other teachers solve instructional problems was often given as an explanation. To high homophily and teacher-centered ideology was added the perception that center staff turned around requests, even the most arcane, rapidly and effectively. This led to greater use of the center by teachers as a core and routine part of their professional activity. Some informants said that the practical focus of center staff had helped tangibly to improve classroom practices.

A related item was the center staff's familiarity with the resource base on its facilities. The materials were voluminous and covered dozens of subject matters, but teachers reported that most requests or problems were handled rapidly by center staff members pulling out what turned out to be an appropriate document or kit from a mass of materials on the same subject. One user said,

> They really know what they've got in there. And that really cuts down the time I have to search around. It would take weeks or I'd just stop trying to find what I wanted if the center wasn't there.

This factor should be underlined. Unlike most staff in resource libraries, the Arcadia center staff appeared to have substantive mastery of its material and an intuitive sense of what was likely to appeal to the

person making the request. This turned a general referral function into a consultative session during which Lessing, Smetana or Willard worked rapidly through a cycle of diagnosing needs, suggesting solutions, then reinforcing those solutions with additional materials. Users chained this servicing capacity to their own more extensive use of the center and to a perception of having come away each time with practice-enriching tools or products.

The interpersonal closeness of the center has been alluded to elsewhere. It is difficult to unpack empirically. Some of it was present in the physical environment: the rugs, lamps, armchairs, murals, coffee, music. Other informants stressed the cordiality of center staff and ease of access to them:

> People around here feel welcome if they come in. There's an open door policy in here and they feel it....When you call in, you don't have to run through secretaries to get Don or Carla; they'll usually answer the phone themselves.

For former pre-service students, the center was a sort of home base to which they came regularly for advice and nurturance. Others insisted on what they called "professionalism" ("I come as a professional to professionals") or "caring" ("They really care about you"); one teacher from out of state was overwhelmed ("I cried right there") when she came to the center after a three-year absence, having only been there once in the past for a summer workshop:

> I figured they wouldn't even remember who I was but they called me right off by my first name and were really happy to see me.

The trick here was that of servicing some 500 people yearly with a many-pronged program while still attending to interpersonal consideration. Lessing insisted that the core of the teacher center lay here:

> Lessing says that we haven't asked him about the most important aspect of the center.... It's 'the affective things between the staff, the (pre-service) students and the teachers. There's a bond, a really warm feeling. That's really what counts. And it explains why a lot of them come back and use the center... I feel strongly about attachment to all these people... That's what holds everything together.'

This characteristic was especially prominent when teachers called or came in with problems. They felt at ease in admitting failures or shortcomings and usually came away with solutions that proved helpful. Part of that success had to do with follow-up on the part of teacher staff, who would "check in" a few weeks later to see what was happening.

The wealth of the materials bank at the center was usually the first item mentioned by an informant as accounting for his/her use of the center. That the surrounding environment had few such resources made the center more valued and resulted in extensive use.

Finally, many users said that, at least in the beginning, they would not have come to workshops or special projects if there had been no rewards for participation. Participation led to contract recertification credits, which in turn "allowed you to move across the pay scale." But initial use of the center for workshops appears in most instances to have led to further use bringing no extrinsic rewards, in particular use of the resource bank.

3.3. THREE RIVERS TEACHER CENTER, 1979-1981

3.3.1. Main Events and Institutional Context

The situation improved measurably in the third year. Grace Bush moved into a stronger leadership role and showed herself to be energetic and interpersonally skillful. She increased ties between the teacher center and staff at the college of education, in particular, members of the elementary education department. In this and the following year, a diverse and relatively well-attended activity format was put in place. One special project, using micro-computers in area schools, was spectacularly successful. Gradually, the center became visible to the Three Rivers District and, in the fourth year, to county districts as well. Attendance and drop-ins increased, reaching 3,000 in 1980-81. Of these participants there emerged a small core of teachers at the elementary level who drew on center staff not only as resource finders, but also as solution givers and process helpers in the implementation of indstructional changes. Support from area principals also grew.

But there were problems, notably confusions in role definition among center staff. leading to the resignation of the (new) co-coordinator and to dissatisfaction on the part of the secretary and local resource colleague. Grace Bush was overextended and unable to keep two half-time jobs going (one at the teacher center, the other as graduate teaching assistant). The local policy board appeared to sputter. The chief crisis occurred when district administrators, facing budget cuts, proposed that its funding for the center be discontinued, a recommendation that was overturned but which left the center with fewer resources and further discouraged its staff.

3.3.2. Institutional Structure and Procedures

Four institutional changes were noteworthy: in administration, governance, resource levels and program.

Administration. Grace Bush continued as coordinator in 1979-80 but her colleague left the center. A replacement was found in the person of Claudia Herrick, a former elementary-level teacher. Herrick had difficulties carving out her role, which increased an already

chronic problem of role definition. Grace Bush refused to become "boss," as she put it, but continuously found herself plugging holes in the organization of workshops, contacts with schools and follow up on policy board decisions. Others at the center - the coordinator, secretary and resource person - would have preferred more central authority from Bush, yet also complained of being left the more thankless tasks. Much of the problem derived from the part-time status of everyone (as contrasted with Arcadia, where center and college responsibilities were joined in a full-time post). There were few times when two staff members were at the center simultaneously, which made for poor communication and loose ends. Finally, Bush wanted to put her energies into program development, contact with the schools and one-on-one consultation, but found herself saddled with routine administration and the organization of large-group workshops. Adding up her hours spent on the activity logs (see Table 3-1) shows that she put in 40% of her monthly time on routine administration, logistical matters related to workshops and projects and attendance at local meetings. The corresponding amounts for Lessing at Arcadia State total 17%.

Governance. Ambiguities about relative power and areas of responsibility among center staff were not cleared up by the policy board which tended to approve all staff requests and had otherwise drifted into a more passive mode. Some center staff felt that the policy board was not viably involved with the center; board members were either overcommitted elsewhere or represented their constituencies in a pro forma way. Bush also felt that it was difficult for center staff to communicate with the board members. She claimed that the meetings drained her and added on more, sometimes unnecessary, follow-up work.

Resources and program. Although the school board had voted to reinstate the budget for the teacher center after an initial recommendation to stop funding (see the "school board meeting serial" in section 6), only 80% of the budget was in fact restored. The cuts came from staff time and materials. In 1980-81, the center remained open seven months (as compared with nine the previous year) and was closed on Fridays. This took its toll on participation and resource materials.

3.3.3. Changes in Objectives

At the policy level, the center maintained its core set of objectives: accelerating practice change, increasing peer exchange, turning "ownership" of the center over to the teachers and encouraging self-reflection on the part of teachers. However, there were forces at work that diluted some of these objectives.

1. Acceleration of practice change seems to have occurred incrementally as a result of center use. But most of this consisted in small additions to teachers' instructional repertoires. Bush felt that there was very little demand for workshops on new techniques of class management or more radical changes in curriculum and evaluation:

> And this dictates the shape of the program. We have to go with the mainstream. They have a 'now' focus. They want a small piece, like how to add to a science lessson, and they want to make something or take something home with them.

In Bush's judgment, this demand characterized the primary-level users. Secondary people were interested in wider-scope issues, but tended to approach practice change philosophically rather than operationally.

Nor was the center as institutionally engineered to promote instructional changes as was the Arcadia Center. As a wholly in-service enterprise, the Three Rivers center had no pre-service interns to model new strategies. Nor did it have structured change-facilitating mechanisms such as the one-week workshop on individual projects at Arcadia. Also, there appeared to be few follow-up procedures at Three Rivers. Whereas the materials bank at Arcadia had engendered changes in classroom organization, the bank at Three Rivers was smaller and contained few commercial materials. Finally, all staff members complained that they were "just barely staying on top" of ongoing activities and had no time to think through approaches that might have greater effects on teachers.

2. Peer exchange remained a core objective. There were still "sharing" evenings and workshops led by area teachers in their areas of interest and expertise. Teacher-made ideas and projects were plucked from local classrooms and displayed at the center. Overall, the notion was a workable one and had good effects: greater subsequent exchanges, the genesis of craft pride on the part of teachers who taught others or donated products to the center and more rapid circulation of promising new practices within the schools.

But there were also problems here. Some teachers leading workshops were perceived as arrogant or patronizing by their peers. It was difficult to avoid the implication that a workshop leader was instructionally superior to his/her fellow teachers. Characteristically, workshop leaders from other parts of the state were better received than locals. Also, some teachers were poor adult pedagogues. Some informants said that the center's founders may have placed too much confidence in the capacity of teachers to direct, program and teach at their own center.

Some authorities were also disappointed on this score. For different reasons, administrators and school board members had been interested in the peer exchange concept. Their idea was that superior teachers would act as a model and resource for less effective teachers. The general perception was that this had not occurred.

3. Teacher ownership was hard to measure. Gradually, area teachers came to view the center as a useful resource but did not see it as belonging to them or to their association. A giant leap forward on this dimension took place when district administrators tried to cut the center's budget and ran into stiff and highly vocal opposition on the part of teachers, even those who had never used the center. From that point on - the fall of 1980 - teacher support was stronger, although some of that support may have had more to do with combating district administrators than with laying claim to the center on professional grounds.

4. Teacher self-reflection appeared to be stalled. Bush had tried to program more speculative, issue-oriented and professionally centered workshops. They had not worked well, expecially for primary-level teachers. Secondary teachers were interested in broader social issues - adolescence, death and depression - but less so in reflections on their own professional behavior.

There was a progressive displacement toward two modal activity types: the one-shot workshop on a narrowly practical topic and the large-scale classes. The latter discouraged teacher center staff, partially because the incentives here were to collect continuing contract hours and post-graduate credits. Bush said,

> They don't even try to hide it...It's one of the easiest ways to get continuing contract accreditation - no papers, payment or texts. That gets me depressed at times.

She estimated that about 40% of the center users were chiefly interested in the credits. The remaining 60%, she felt, were "genuinely interested in gaining new skills and getting new ideas."

3.3.4. Key Persons and Relationships

The same set of key persons, with one or two exceptions, remained active at the teacher center: The coordinator, Grace Bush, the center secretary, Alice Adams, and the resource colleague, Sally Carr. In the third year, Brenda Buckley became one of North Central's delegates to the local policy board, as did another member of the elementary education department at North Central, Walter Scheel. Scheel called his role "my tour of duty." Paul Saganne was influential in center affairs from backstage, especially during the budget crisis. Finally, Claudia Herrick was hired as co-coordinator, but resigned midway through her first year (1979-80).

As already mentioned, there were communication and role definition problems. Also, all staff members felt they were underpaid. The cumulative effect of these difficulties, together with role overload, discouragement over the drift of the center to a less innovative function and shock at the attempt to cut their budget, all reduced morale. When data collection ceased early in 1981, Bush was leaning toward leaving her job. Some informants felt the center would go under if she did. Were she to resign, she would have been the fourth coordinator to do so in the four years of the center.

3.3.5. Resource Changes

As with the other centers, the proportion of external funding dropped sharply from the third to the fourth years. At Three Rivers, the school district was to move from 35% support to 65% support of the center budget. The dollar amounts were not huge; the total budget came to roughly $38,000, and it was estimated that the district office had at least $30,000 in its budget line-itemed for in-service education.

Nonetheless, the transition was a difficult one. Faced with instructions to cut the budget, school administrators judged that the teacher center was a less crucial item than expenses for pupils or outlays which would reach 100% of the teaching corps. Center staff and delegates were particularly shocked by the proposal in that both assistant superintendents were policy board members who had not mentioned the recommendation until it became public knowledge. A more detailed account of this incident is given in section 6.

The cutbacks mentioned earlier reduced the hours and services of the teacher center. Fortunately, there were other sources of funding, notably North Central University. Under the financing agreement, at the end of the five-year period, the school district was to put in $21,000 and the college of education $17,000. In other words, the college of education maintained an important stake in the center. Some of these funds came back through post-graduate enrollments in courses organized by the center.

Knowledge resources were also donated by teachers in the form of workshops, presentations and products from their classrooms. Teachers were aware that access to activities at the center called for reciprocity on their part. The peer exchange notion was seen as a gesture in that direction. One active user talked that through:

> I like being a giver and a taker at the center. I've taken about 15 workshops and I've gotten a lot of materials and ideas. But I've given things too: ideas on art and creative writing and math... I donated a learning center on the industrial revolution and inventors. I did a presentation of read-aloud books and I wrote an article in the state-wide network newsletter on teacher centers.

3.3.6. Three Rivers Teacher Center Activities

Activity types and formats. These remained fairly constant; there was strong overlap in the set described for 1977-79 (see section 2.3.6) and the set reported in the Gibb Foundation for 1979-80. Below is the 1979-80 breakdown:

1. Long-term classes and projects
   - post-graduate course of law (90 participants)
   - poetry in the classroom (eight-week course (20 participants))
   - writers in the schools project (two months, 18 teachers)
   - micro-computer project (25 teachers)
2. Shorter-term classes
   - 44 two-hour workshops on such topics as medical emergencies, dealing with depression, make-and-take math games, ins-and-outs of graduate school, spelling without a spelling book.
   - sharing evenings between teachers of the same grade or subject

3. Services

- drop-in, browsing
- facility for meetings of teacher association, community groups
- assisting teachers in finding books and other resources for classroom use
- assisting principals in the organization of within-building in-service

4. Activity centers (integrated curriculum units, including ideas for development of the theme contained in the center).

Some of the contrasts with the program at Arcadia are instructive. The intensive one-week summer workshop was not held at Three Rivers; in fact, the center typically closed down for the summer, giving over in-service to programs at North Central. There were also fewer projects at Three Rivers keyed specifically to the acceleration of practice change, although some of the special programs (poetry, writing, micro-computers) typically led to such changes as second-order outcomes. By contrast, a good deal of energy was invested at Three Rivers in one-time workshops on general and practice-relevant topics. This type of workshop series had been discontinued at Arcadia in 1970 and re-instated the following year at a more modest level. The likely explanation here is that Lessing saw the one-time workshops as less impactful and as draining to staff time and energy better spent on more ambitious projects that combined pre-service and in-service functions. Finally, the item describing assistance to the principals shows that Three Rivers had become more politically skillful in delivering inputs to building administrators rather than competing with them for exclusive rights to in-service training. The item also points up the comparatively lesser role played at Arcadia in working directly with school administrators.

The 1980-81 program at Three Rivers was comparable, with the exception that more longer-term classes on general topics were given, notably for a secondary school public. The center also helped to organize a Saturday workshop series previously held at North Central and leading to post-graduate degree credits. And plans began for the center to organize an in-service training project contracted to North Central by the state education agency in the area of multi-cultural education.

Looking more closely at this activity set and its recent evolution, it becomes clearer why Grace Bush was complaining about goal displacement at the Three Rivers Center. The largest activities, in terms of number of participants and organizational time, were one-time workshops and courses given for university-level credit and for which the center was essentially playing a logistical role (getting out announcements to teachers, taking enrollments, arranging for facilities and payment of fees, helping with any ongoing operational problems while the course was taught). The function here was that of brokering for the university. This was an improvement over previous arrangements in that the center could give input to the university on formats and instructors likely to be effective with practitioners. But it did divert time and energy away from what had been the chief objective of the center: facilitating teacher change and instructional problem-solving by calling on peer and other teacher-identified resources.

Other projects also led to the mobilization of time for activities remote from the intensive, change-accelerating mode in which the center originally had seen itself operating. For example, center staff Helped to organize a Catholic School Week for its parochial school members This involved setting up some 20 mini-classes on practice-relevant topics. The center contacted people to give the classes, made logistical arrangements and supervised operations. It was, from all accounts a very successful enterprise, but one which diverted energies from other tasks.

Selection of activities. Part of the reason why goal displacement was occurring was that area teachers were asking explicitly for large-group classes leading to university-level accreditation. This was not the only demand, but it translated into one of the more time-consuming requests for service. It also jibed poorly with the philosophical assumptions held by founders that teachers would use such a resource primarily to change and reflect on their practice and to exchange professionally meaningful information.

The college of education also contributed to this drift in turning, quite logically, to the center as the most convenient vehicle to deliver its programs to local schools. In some instances, these were offerings whose focus was externally determined, e.g., a state requirement for teachers to be certified in multi-cultural education. In others,

there was an attempt to match college of education resources and requirements with user needs.

The special projects (poetry, writing in the classrooms) came chiefly from the center, after consultation with the policy board and local school people. The one-time workshop topics came from consultations with teachers and building administrators, often through the intermediary of policy board delegates. Unlike Arcadia, however, these delgates serviced several school buildings, rather than one or two, and had to resort often to "needs assessment" questionnaires.

Workshop and course leaders. Estimates of the source of expertise for teacher center offerings are not robust; a less fine-grained analysis was made here than at Arcadia. Below we expand a table given earlier for Arcadia in order to contrast the two centers:

Table 3-10 Sources of Expertise for Workshops and Courses at Arcadia and Three Rivers

Source	Proportion of Total	
	Arcadia	Three Rivers
Teacher center staff	.45	.05
Specialists from within the state	.16	.05
State college/university staff	.06	.30
Staff from other college/universities in the state	.06	.05
Specialists in the immediate vicinity of the center	.06	.12
Specialists from outside the state	.06	.02
Local teachers (in one of the districts belonging to the center	.04	.25
Teachers from elsewhere in the teacher center network	.02	.02
Teachers from outside the state	.02	.02
College/university staff from outside the state	.02	.00
Teachers with specializations from within the state	.02	.05
Teachers with specializations from outside the state	.02	.02
Local teachers with specializations	.00	.05

Recall that the Arcadia estimates are made from analysis of the newsletter, so their validity is questionable. However, other data collected from coordinators make both sets of estimates look plausible. The comparison shows clearly (a) that teacher center staff at Three Rivers were giving far fewer workshops and (b) that teachers at Three Rivers were more active as workshop leaders. Input from the college/university site was greater at Arcadia, but almost all of it came from teacher center staff. By contrast, Three Rivers center staff called more on local specialists (e.g., psychologists, writers) who were probably more numerous at Three Rivers (pop. 45,000) than at Arcadia (pop.3,000). Inputs from the university at Three Rivers also came from a greater number of departments than at Arcadia, but this too might be the result of the far larger size of North Central University by comparison with Arcadia State.

One final note here: As mentioned briefly, sources of expertise shifted with the change of coordinator. In the first two years, workshop leaders came almost exclusively from local schools and community agencies, with very few university inputs. With the arrival of Grace Bush, university staff took on a far more prominent role in workshops and projects.

Attendance. Data here are difficult to interpret. Figures given for 1979-80 total 3,325 users of the center, many of them presumably multiple users who were counted more than once (as at Arcadia). But some counts may have inflated totals, as, for example, the inclusion of 249 community users who were very likely attendees at meetings of local groups for which the center provided facilities. Figures also show that local district use (1371) was greater than use by outlying county teachers (94). But these numbers for county teachers were greater than for previous years. In all, these totals are nearly 1,000 greater than 1978-79, although center staff estimated that attendance was off slightly from the previous year for several reasons that had nothing to do with the center, e.g., greater responsibility for sports activities, a contract dispute.

Statistics also showed breakdowns by school building for 1979-80. There was wide variability, ranging from 85% of all teachers for one school to 17% in another, with a median of 35%. The median for elementary schools was 43%, for secondary schools 25%. Center staff could not account for differences between schools at the same level (primary, secondary), and said that these levels had fluctuated yearly.

Finally, estimates of repeated use showed gains over the previous year. About 40% of those Three Rivers teachers coming to the center used it on at least seven different occasions (a continuous workshop only counting once). Repeated use was lower for parochial and county schools but still up over 1978-79. Some global estimates made by Bush during an interview are also pertinent here. Taking users of the center as 100%, she broke down repeated use by level as follows:

	elementary users	secondary users
addicted users (do most center activities offered)	20%	10%
frequent users (do 3-4 activities)	50%	40%
sporadic users (1-2 activities)	30%	50%

3.3.7. Interorganizational Dynamics

Consensus and conflict. The situation at Three Rivers was peculiar. The teacher center did not generate conflicts as much as it served as an amplifier for friction existing before the center was founded; notably between local teachers and administrators. Also, two of the issues could better be described as dilemmas than as disagreements. Table 3-11 shows these issues. (For comparison with Arcadia, see table 3-3).

Note that the between-center competition for resources and enrollments that was salient at Arcadia did not surface here. Apparently, the Three Rivers center had a sufficient pool of participants to draw from, even if some went elsewhere. Nor was the prosperity of the center at Three Rivers as bound up with the college of education as was the Arcadia center. But this sliced both ways. The Three Rivers Center was more orphaned from the college of education and was able to call on fewer of its resources rapidly.

The first entry in the table has been discussed briefly and will be treated in more detail later (see "school board meeting serial" in section 6). District administrators were ready to close the center; teachers were not and saw the gesture as "anti-teacher" rather than as an evaluation of the center's effectiveness. In this sense, the Three Rivers Center may have been a casualty of friction between two of its participating member groups and became as a result an arena for their disagreements. No noticeable problems of teacher administrator disharmony surfaced at Arcadia. But administrators at Three Rivers had

Table 3-11 Conflict at Three Rivers

PARTIES INVOLVED	ISSUE	HOW RESOLVED	EFFECTS +	EFFECTS -
Within the network				
Between local IOA partners				
Teachers and administrators	Utility of maintaining a teacher center	Confrontation-Teachers prevail	Center continued	Worsened teacher-admin. relationships
Teachers and center staff	Goal incongruence	Center staff accommodate	High extent of center use	Disappointment, overload for coordinator
Within College of Education				
Within school district				
Within teacher center				
Center staff	Role ambiguity, unclear areas of authority	Confronted in one-day retreat and follow-up	More clarification, better communication	Basic issues unresolved

been cautious in their remarks about the center from the start, so that the recommendation to cut out district funding did not come as a total shock to informants. There were two hypotheses being circulated: 1. As a school board member said, "You can take that recommendation as an indication of how important they thought the center was." 2. Others, notably Paul Saganne, said that the recommendation had been a strategic device by the superintendent to create a situation forcing the school board to see how important the center was to area teachers and thereby consolidate school board support. According to this line of thought, there was no teacher-administrator conflict over the continuation of present levels of support.

We have also mentioned the second item on the chart. Some teachers used the center only as a rapid means of getting contract recertification and salary increments. The center staff was not interested in servicing such needs, yet needed the participation of as many local teachers as possible in order to defend itself institutionally. Reflecting on 1980-81, Grace Bush said:

> This year we're getting more people who are only coming in for the credit. Maybe we're even turning people into credit-seekers.

This was a dilemma to which the center accommodated by servicing the public while still maintaining offers for what it saw as a more professionally committed audience. In doing this, however, Bush got overextended and discouraged. Her likely resignation at the end of 1980-81 may have been a result of attrition over this dilemma.

The final issue has been covered reasonably well. As shown in the "one-day shut-down serial" (see section 6), the problems of role ambiguity and spheres of authority were addressed by the staff but not resolved, in part for structural reasons (half-time commitments to other jobs).

Bargaining and exchange issues. As with the Arcadia case, these issues consisted of tacit agreements seldom brought to consciousness by the institutions making them. Four such exchanges were evident at Three Rivers; they are shown on Table 3-12.

The first exchange deals with the transfer of overall authority over in-service (choice of topics, choice of teachers) from the central administration to the teacher center, where district administrators had little direct influence. They approved lists of activities and trainers with little close scrutiny, although they did veto one

Table 3-12 Bargaining-Exchange Issues at Three Rivers

Parties Involved	Exchange Made	Institutional Consequences	
		College of Education	School Districts
Teacher center and school district	District gives control of in-service to center, gets inexpensive, rich knowledge resources	Meets local service/out reach objectives by teaching in in-service prog.	Significantly improved in-service infrastructure
Teacher center and subset of teachers	Center gives recertification credits in return for participation in center activities	(Indirectly) greater enrollments	Extensive, accessible facilities for teacher recertification
Teacher center and teachers	Teachers give services (workshops) in return for other activities mounted by teacher centers	Meets local service/ outreach objectives	Greater peer exchanges, improved instructional capacity from other center events
Teacher center and College of Education	College provides money and institutional backup in return for better access to teachers	Spared organizational burden; recruits and addresses teachers more efficiently	Easier access to university courses and workshops; more "tailored" offers available

workshop proposal (on the preparation of income taxes). In return, they got an extensive in-service instructure. College staff who taught workshops or courses at the center helped to meet the university's objective of providing services to the local community.

The second issue has been addressed: teachers hunting for easy ways to get credits also provided support for the center, both verbally and by showing in the enrollment figures that the center was well attended. Often, these enrollments provided revenues to the university when a post-graduate course was concerned. The next item has also been touched on: teachers reciprocated for the workshops, special programs and materials they received from the center by giving workshops themselves and by donating displays and materials. University staff participated in the overall program, thereby showing their commitment to the center and to the general outreach function.

Finally, the university used the center to disseminate new programs (energy education, a new geography curriculum) and training events (multi-cultural education, Saturday workshops), the latter being organized by the center. Training events were tailored better to local needs as a result of consultations between Grace Bush and faculty members giving courses about appropriate formats and presentations.

Knowledge transfer. To remain parallel with the Arcadia case, we will run through the same subcategories: knowledge types, knowledge use and linkage functions.

Knowledge types. Table 3-6 showed the distribution of the knowledge resource base both at Arcadia and Three Rivers. The discussion (section 3.2.7) contrasted the two centers. To focus on the Three Rivers more narrowly, we saw that Three Rivers had a comparatively low quota of R&D based products and practices, most of these coming through the development of materials stocked at the center. Products and practices tested at the college of education were also low (estimated at 15% of the total), but their very presence is worth spending a moment on. Whereas most of the college-mediated products and practices at Arcadia came directly through teacher center staff, there was no equivalent at Three Rivers. Bush was a teaching assistant and she could only serve as a relay to the schools. There is evidence that college of education staff did develop some materials specifically at the request of the teacher center (e.g., learning centers in rocks,

astronomy, geometry and math games) and others which were meant to reach local schools via the teacher center (e.g., energy education materials, a geography program).

The bulk of the knowledge resource base - an estimated 75% - came from materials that had been commercially developed and made available through the center, and from home grown products. Three Rivers had fewer commercially developed materials than Arcadia, as much for reasons of policy as for reasons of space. But Three Rivers had more home-grown products: displays and projects donated by local teachers (usually following a request by a center staff person), activity centers put together by the local resource colleague, and the various formats, exercises and add-on materials exchanged between teachers during one-time workshops (spelling without a workbook, new ideas in art).

Looking again on Table 3-6 at the validation basis for the in-person knowledge transfers at the center, there are sharper differences between Three Rivers and Arcadia. Expert-approved or specialist/technical validation at Arcadia came from teacher center staff, often at workshops; little came from specialists outside the college and little was craft-mediated in the sense of deriving from teachers' stock of "techniques that work." At Three Rivers, university staff participated about as much as other specialists in the community, but the university input was low (25% of the total) compared to Arcadia (70%). Since much of the knowledge transfer at Three Rivers involved exchanges between teachers, the proportion of craft and consensually validated knowledge was highest (55% of the total) and far greater than at Arcadia. Often, validation bases depended on whom the coordinator would call:

> G. Bush: We had a sort of operating principal for workshops. Were there teachers who could do it? If not, were there any university people? If not, were there any community people? We put the priority on resources coming from the teachers.

By the third and fourth years the university's portion had moved up considerably. Here, Bush's primary affiliation was pivotal:

> I did my degree there. I work there now. I know them so I can get to them more easily. It's as simple as that...I'm not as much at home with the principals and superintendents.

Knowledge use. Table 3-7 (see section 3.2.7) also contrasted Three Rivers with Arcadia in relation to the main use of knowledge resources. For the convenience of the reader, we repeat the chart below:

Table 3-7 (repeated) Use of Knowledge Resources by Teacher Center Participants at Arcadia and Three Rivers (Estimated % of Total)

Types of use	Arcadia	Three Rivers
General knowledge	5%	5%
General personal/ professional growth	10%	10%
Improved understanding of work situation	10%	10%
Solving particular problems or class of problems	25%	15%
Reinforcing existing practices	25%	40%
Adopting new practices	25%	20%

As noted earlier, both centered on the practical. Both attend to local problem-solving and the reinforcement of current practices, notably in areas of instructional weakness. We saw that Arcadia was more active in consultation mechanisms for problem-solving and in projects designed to accelerate practice change in core areas of instruction and classroom management.

There was a sort of schism at Three Rivers. Secondary-level teachers came to events dealing with general topics and professional growth, e.g., workshops on depression, divorce, law, adolescent development. But they used few center resource materials and were not interested in the hands-on, materials-centered workshops in which elementary teachers participated actively, stockpiling all the materials and ideas they could gather in. By contrast, few elementary teachers attended the larger, more broad-gauged workshops, and attempts to set up special topics for elementary teachers on, say, children's cognition, were not successful for the most part. Finally, neither public was looking to make major changes in its classrooms.* Their chief concern, in particular elementary teachers, was to expand their repertoire,

* Teachers coming to the Arcadia center were probably not looking to make major changes either, but often found this to be the case as a result of the center's structure, wealth of materials and follow-up mechanisms.

extend their instructional "bag of tricks" in art, science or reading. Secondary teachers were more theoretical.

Linkage roles and functions. Three Rivers center staff were institutionally nested in a different way than center staff at Arcadia, i.e., outside the College of Education and not integrated into staff slots within the school district. Also, Grace Bush had far less institutional clout than Don Lessing in the College of Education and, perhaps by extension, in the district administrators' office. These elements made for a different configuration of linking roles and functions.

Table 3-13shows these functions for Three Rivers and recapitulates the estimates given in Table 3-8 of linkage functions at Arcadia. Investment by the coordinator and other center staff in the university was practically absent, aside from periodic consultations with college staff on course and program format and the provision of supplementary course materials from the center storehouse. This does not mean to say that the center had no impact on the university, but rather that what impact there was did not result from services provided on request to the university by teacher center staff.

Looking at the school district as users, we can see that the coordinator and her staff at Three Rivers were active in most areas, but considerably less so than at Arcadia. Some of this was due simply to the amount of time put in; Arcadia had a slightly larger staff and fewer competing claims on its time and these other claims reinforced the accomplishment of tasks at the center. The activity logs (see Table 3-1) for the coordinators translate into a 400% difference in hours put in over a month, even allowing for inflation at Arcadia. At Three Rivers, a moderate effort went into searching out, bringing in and making available practice-relevant materials in areas where there was a strong demand. Drop-ins drew from this materials bank; the activity centers also came under this category. The heaviest and apparently the most successful investment went into delivering resources based on an assessment of user needs, chiefly through the organization of about 25 one-time workshops on practical aspects of classroom instruction and management.

Other linkage functions accomplished by center staff were performed less often. The consultation function was weaker than at Arcadia, and center staff played more of a middleman, resource-hunting role-

Table 3-13 Linkage Functions of Boundary Personnel at Three Rivers and Arcadia

Functions	UNIVERSITY AS USER				SCHOOL DISTRICT/TEACHERS AS USERS			
	Three Rivers		Arcadia State		Three Rivers		Arcadia State	
	Investment by linker	Perceived success (user's judgment)	Investment by linker	Perceived success	Investment by linker	Perceived success	Investment by linker	Perceived success
1. Resource transforming for potential users (packaging, synthesizing, making easily available and usable	none	n.a.	moderate	++	moderate	+	heavy	++
2. Resource delivery: searching, retrieving based on user needs; passing on, informing, explaining	none	n.a.	minor	+	heavy	++	heavy	++
3. Solution giving: advising, encouraging adoption of idea, product as a solution to user problem	minor	+	minor	++	minor	+	moderate-heavy	++
4. Implementation helping: supporting user's efforts to build knowledge into ongoing operations	none	n.a.	minor	+	minor	+	heavy	++
5. Process helping: listening, encouraging, talking through problems	none	n.a.	minor	+	minor-moderate	+	moderate	++
6. Direct training: giving workshops, classes, courses.	n.a.	n.a.			minor-moderate	+	heavy	++

Investment	Perceived Success	
Heavy	++	very successful
Moderate	+	moderately successful
Minor	0	negligible success
None	-	unsuccessful

matching expressed needs with expertise, products of information which the center could access quickly - than a solution-giving role. Implementation helping was also less frequent, probably as a result of role overload (too many organizational duties) and of a lack of mechanisms either to follow up on a workshop and a drop-in or to put pressure on teachers to follow up, as was done at Arcadia. Similarly, one-on-one consultations, often about major practice change or about serious problems inside the classroom, were less prominent. Center staff had too little time for them, but would have wanted to spend more. And area practitioners, aside from a few dozen elementary school teachers, did not as yet see the center as a place to bring in their core concerns, weaknesses or uncertainties. By the fourth year, however, process helping was beginning to expand beyond this small corps of teachers, largely because of the interpersonal skills of the coordinator. In these instances, process helping usually led to solution-giving. Here is an excerpt from her activity log:

> Week of October 13-16, 1980: Spent some time (2 hrs.) working with L.M. at the workshop for new teachers, talking through what she needed for her classroom. She often came in looking for 'ideas' and we end up talking about her classroom, for example, frustration of being a teacher for Asian refugee children and not really feeling qualified and ending up talking about language and reading.

Finally, center staff did little teaching or workshop animation, and far less than did Arcadia staff. Grace Bush taught a one-time workshop in 1979-80 and at least two in 1980-81 in her areas of specialization, early childhood education and reading and language development.

3.3.8. Barriers

Table 3-14 lays out the chief difficulties encountered at the center and follows these items through to their institutional effects. It is interesting to note that, unlike Arcadia, most of the barriers listed for the initial two years at Three Rivers (see section 2.3.8) were still present the following two years, with two exceptions: leadership had improved dramatically and exalted expectations for the center had faded.

Table 3-14 Barriers at Three Rivers

Locus and barrier item	Variable label and number (from causal network)	Institutional effects (from causal network)
Characteristics of college		
lack of ownership	(low) university enterprise commitment	lowers multiplexity of links to teacher center (28), lowers institutionalization (49)
Characteristics of teacher center staff		
high staff turnover	(low) staff stability(46)	hampers institutionalization (49)
low perceived homophily	(low/mod) homophily between center staff and school people(18)	reduces coordinator's influence, clout (34)
role overload on coordinator	(high) role demands on coordinator (39a)	lowers leadership stability (40)
Characteristics of teacher center operations and facilities		
poor facilities for teacher center	(low) quality of facilities (29a)	lowers extent of use (31)
centrifugal authority	decentralized management(46a)	increases role overload of coordinator(39a),lowers staff stability(46)
Characteristics of school district		
low participation of secondary school teachers	extent of use (31)	lowers extent of use (31)
lack of ownership	(low)teacher centrality (low/mod) institutional priority for schools	lowers admin.support (29) and institutionalization(49)
budget constraints	(low) internal funds (42)	reduces institutionalization

The first item in the table, lack of ownership by the college of education, is more speculative than some of the others. We claimed earlier that the center was institutionally orphaned from both the college of education and the school district. This was not the intention of the founders, who wanted to put the center in a neutral territory. But the fact that no institution or group laid claim to the center appears to have weakened it. That the coordinator had little clout in either the college or the district and that the center was not tied to a career incentive for her also acted to reduce the salience of the center for the college and school district. Yet support was not lacking. As the causal network shows, the center was a priority of the college (var. no. 12), was the object of resource commitment on the college's part (no.9) and enjoyed college-level support (no.19). Grace Bush said:

> Paul (Saganne) brings up the center in meetings or policy discussions...The center is seen as a commitment for the college.

Another college staff member who had no connection to the center made an identical claim. However, in spite of the high priority, support and resource commitment on the part of the college, the center was not a core concern. Some of this comes through in an excerpt from an interview with Paul Saganne:

> It's important to understand that the Teacher Centers are one of the many things we are doing by way of connecting university facilities and the world of practice. It's not that central an activity in the university's life. I happen to have a lot of personal involvement and commitment to the project, but it...has never been a high priority in the life of the College of Education.

The college of education at North Central had a large faculty and a myriad of outreach activities throughout the state. Some felt that the staff was overextended. The center was one of these outreach activities, but not one for which any department felt fully responsible. Aside from the elementary education department, no unit had more than casual contact with the center. Within the elementary education department several members had worked with the center or served on its policy board, but theirs appeared to be an individual, rather than departmental, commitment. The result, as the table shows, was that linkage between the college and the teacher center was weak and depended on 2 - 3

members of the teaching staff at the college, none of whom maintained continuous contact with the center. That no unit among the participating institutions laid a firm institutional claim to it probably also reduced the institutionalization of the center.

The remaining barriers on the table requires less commentary. High staff turnover also destabilized the center. The fact that Grace Bush was seen as an outsider and a university staff member lowered her influence in the school district. The system of decentralized management, together with the multiplicity of tasks she shouldered, overloaded Grace Bush, who was spending three nights a week at the center in 1979-80 in addition to her half-time during the day. The decentralized management system led to centrifugal leadership, with unclarity about spheres of responsibility. And the center suffered from its restricted space and peripheral location. That the center was difficult to get to lowered participation. But when activities were held in local schools, it was harder to build commitment for the center as an institutional entity.

Finally, within the school district there were three noteworthy barriers. Secondary-level teachers not only participated less in the center, but according to Bush, "they used it as a place to get away from the classroom, so that some of the things we did with them professionally were superficial." Parallel to the college of education was low ownership of the center on the part of the school district, particularly by district administrators for whom this was a lower priority. Teachers became more committed to the center, notably after the confrontation with authorities over the center's budget, not to the point of viewing center participation as a core function. That budget constraints pushed administrators to drop financial support for the center showed how vulnerable the project was to environmental turbulence.

3.3.9. Facilitating Factors

Although the chief barriers to the center's firm implantation at Three Rivers carried over to the third and fourth years, its leadership and operations improved considerably. Table 3-15 reflects this evolution. The college of education continued to support the venture, thereby maintaining the high energy of the coordinator and letting it be known that the college would intervene in moments of crisis. Support

Table 3-15 Facilitating Factors and their Institutional Effects: Three Rivers Site

Locus and item	Variable label and number (from causal network)	Institutional effects (from causal network)
Characteristics of College of Education		
support of chairman, elementary education department	university support (19)	reinforces coordinator, assists in crisis moments
priority of service objective	university service centrality (4)	makes center a priority (12), leads to support (19)
Characteristics of Teacher Center Staff		
coordinator's responsiveness	responsiveness of IOA staff (20)	increases teacher administrative support(25), extent of use(31)
coordinator's energy	energy of coordinator(21)	increases perceived responsiveness (20, variety of activities(26), diversity of objectives(22)
Teacher Center operations and Facilities		
rewards for participation	perceived school benefits (14)	leads to teacher support (25), extent of use (31) greater
broad appeal to different client groups	diversity of objectives (22)	increases longer-term collaborations (33), wealth of activities (26), extent of use (31)

was facilitated by the importance of the service/outreach objective for the college of education. For Saganne, the rank ordering of institutional priorities reflected this:

> First coursework, then in-service assistance (including the teacher centers), then advice to the state educational agency, then research... Research done here has to have a fairly rapid operational utility. If it doesn't, we don't do it but we try to pick up the products from another university that does.

Except for one faculty member who had a research project going, other college faculty who were interviewed came up with the same ranking. But there was more role strain at North Central than at Arcadia, notably among untenured and associated professors who were interviewed. While service and outreach were important staff functions within the college of education, they had a lower priority within the university at large. Thus faculty who devoted themselves to their teaching and outreach activities found it harder to be certain of tenure or of securing full professorships. One staff member said,

> When I came up for promotion I found, as others did, that outside of the college, publications were considered equally important, if not more important than service.

The strongest gain over the early years was that of leadership. All school administrators and teachers saw Bush as energetic, enterprising and responsive to their requests. Teachers talked about her "flexibility"..."the way she accepts diversity and makes people feel welcome," her "broad interest base" and "the way she listens to you and lets you know she'll help if she can." Her perceived responsiveness also increased support from principals, who had been wary of the center. Here is an excerpt from field notes of an interview with a district principal:

> He first talks about a calligraphy course which the center brought into his school. He was 'gratified' and 'impressed' that this was done in the school so soon after a request had been made...But the episode that seems to have done the most was a contact with Grace Bush about improving physical education at the school. He had tried to get help for two years. He had even gone to ask at North Central University. In vain. He mentioned this to Grace Bush when

> she came around. Very quickly, Bush put together a two-year graduate course, using a professor at North Central. Jasper (the principal) was astounded. Since then, he says, he has been a supporter of the center.

Noteworthy here in passing is Grace Bush's capacity to gain access to university staff by virtue of her affiliation there.

One of the center's strongest attractions remained its authority to grant recertification credits which would be used for salary increments. The appeal was even stronger than at Arcadia; Three Rivers could grant M.A. level credits which accelerated salary increments. Most informants felt that few would use the center extensively if that incentive were absent. But several people thought that users who had originally come for recertification credits typically went on to borrow materials, attend workshops and enroll for projects when they had already used up their credits. As at Arcadia, external incentives gave way to more internalized knowledge-seeking behaviors that fit naturally into teachers' yearly professional cycle of instructional planning and trouble-shooting. By providing the large-scale classes this public was seeking while still maintaining an array of practice-oriented workshops and special projects (e.g., writers-in-the-classroom, mini-computers), Bush helped to diversify center programming and thereby to increase use.

4. OUTCOMES

4.1. OUTCOMES FOR THE STATEWIDE NETWORK

4.1.1. Individual-level Outcomes

Increments in individual status or power were not studied at the network level, but did emerge anecdotally in the course of data collection. Local delegates (e.g., teachers, administrators) to statewide advisory and policy boards were perceived as more cosmopolitan and presumably made some useful contacts. Following the career profiles of teacher center coordinators also suggests that the center post was a way station into education (from social work), out of it (to politics) or to a more prestigious level within it (as college staff member or district administrator). However, these were not calculated trajectories. Coordinators linked to state colleges increased useful contacts (e.g., to deans or presidents) and, when the center was successful, heightened their intra-institutional influence (see below, outcomes at Arcadia).

Increments in individual capacity. Delegates appeared to feel more confident in the educational landscape of the state. For district administrators in particular, the network allowed for useful exchanges with peers and useful contacts with state officials. Coordinators felt they were better informed of resource availability in the state, that they were better administrators and that their own career plans had crystallized.

Individual practice improvement is best handled at the local levels. Overall, district and state administrators found the network useful as a center for exchanges and new ideas. Coordinators felt the network had strengthened their understanding of local politics and of the nuts and bolts of life in classrooms.

Individual costs or negative outcomes were probably minor. Coordinator role overload and burn-out may be the only item here. Some local and statewide policy board delegates felt on occasion that they could have put meeting time on network affairs to better use on their own jobs.

4.1.2. Organization-level Outcomes

Increments in organizational power or status are difficult to determine at other than local levels where most data were collected. There is some evidence that state colleges drew on their affiliation with local centers to expand their resource base and their in-service effort. The centers bringing state funds into the colleges also enhanced the reputations of state college staff who were formally connected to the centers.

As the coordinating agency for the entire network, the college of education at North Central received favorable attention for such an ambitious and successful outreach effort. Contacts with state officials were also strengthened, with the potential of using that link for college concerns in the future.

Interorganizational linkage was appreciably strengthened through the state-wide network. This was in fact one of its primary objectives. The network helped to reinforce weak ties and to create new ones that went beyond network business. This occurred at four levels:

(i) across roles. Network meetings constituted a state-wide forum for the debate of educational issues between teachers, school district administrators, state officials and college or university professors. These groups had otherwise few or no opportunities to exchange views and information;

(ii) between state officials and local officials;

(iii) between local officials or staff (teachers, college staff) holding the same role; and

(iv) between local staff holding repositories of knowledge resources, e.g., teacher center coordinators and local administrators in charge of staff development.

Institutional capacity increments were measured locally (see below) and best discussed there. Overall, local administrators saw the centers as storehouses of useful resources for staff development and problem-solving. Teachers stocked up on new curriculum materials and ideas. And local colleges affiliated with the center came more heavily into the arena of in-service training in which they had previously been absent or ill-equipped.

Institutional practice improvement can be measured with confidence only at the two local sites where data collection was concentrated. There is evidence that state-level administrators were receiving better advice and feedback on educational policy as a result of links made through the statewide network. Also, some of the modest recertification projects run by the state through the local centers probably enhanced instructional capacity, but cannot be tied causally to practice improvement.

Institutionalization. Taken as a set, the nine centers have not as yet achieved stable institutionalization, in part owing to the fact that five of them are only two years old. The final column in Table 4-1

Table 4-1 Degree of Institutionalization: Midwestern Case

	Teacher Center Arcadia	Teacher Center Three Rivers	State Level Teacher Center Network As A Whole
Supporting Conditions			
Considered a core function			
• within local schools	Present	Partly Present	Still Weak
• within the college/university department or faculty	Present	Partly Present	Still Weak
Used on a regular or daily basis	Present	Partly Present	Still Weak
Provides benefits/payoffs to:			
• school administrators	Present	Present	Present
• teachers	Present	Present	Present
• university staff	Present	Weak	d.k.
• teacher center staff	Present	Partly Present	Partly Present
Outperforms or eliminates competing practices	Present	Present	d.k.
Receives support from:			
• district administrators	Present	Weak	Still Weak
• school building admins.	Present	Partly Present	d.k.
• college/university admins. and deans	Present	Present	d.k.
• state-level administrators	Not Relevant	Not Relevant	Present
Passage Completion			
Achieves stable funding source	Present	Weak	Absent
Functions performed are certified by:			
• school authorities	Present	Present	Present
• college/university auths.	Present	Present	Present
Supply and maintenance provided for	Present	Weak	Still Weak
Organizational status is formally established in regulations			
• within school district	Absent	Partially Present	d.k.
• within university	Present	Partially Present	d.k.
Cycle Survival			
Survives annual budget cycles	Present	Weak	Dubious
Survives departure or introduction of new staff	Present	Weak	Weak
Achieves widespread use			
• in school district	Present	Partly Present	Still Weak
• in department, faculty of university/college	Present	Absent	Still Weak
• in State	Not Relevant	Not Relevant	Still Weak

d.k. = don't know

explains why. The nine centers are not yet perceived as performing core functions, although they do provide payoffs. In the new centers, there is still competition with other in-service mechanisms, such as training provided by building administrators. Support is moderate to strong in the four charter centers but still soft or ambivalent for the new centers. Overall, funding is uncertain and core supplies such as learning packets and series are not assured on a continuing basis. Some of the centers are not being funded locally at desired or agreed-on levels and are experiencing staff turnover. The new centers need more time to achieve widespread use. As the table shows, there are also between-center differences among the original four, with Arcadia far more routinized than Three Rivers (see later).

One strong item is the support from state administrators. Not only are delegates from the state education agency to the network more vocal in their support, but the new state superintendent comes from a rural county and backs in-service efforts to smaller or more remote areas of the state. The network serves this function directly.

The network itself may be on shakier terrain. As local districts pick up center funding, there may be less justification for statewide coordination. If federal funding is not forthcoming or if North Central cannot pick up the full costs of coordination, the network may become more episodic. Some informants felt, as one noted, that "the network has only one thing holding it together: the Gibb money." Others claimed that the exchange and forum functions of the network were too important to be abandoned. Since coordination costs were minimal (± $4,000 annually), it is likely that North Central University and the SEA will be co-gether to cover them.

4.2. OUTCOMES FOR THE ARCADIA TEACHER CENTER

The full set of outcomes by category is contained in the following fold-out tables (see tables 4-2 and 4-3). It is impossible to review the full set of outcomes for each target population; a very brief commentary follows.

4.2.1. Individual-level Outcomes

Some general remarks may help. Looking first at the individual-level outcomes for teachers, note that the number and convergence of effects were both high. Teachers felt more professional and found themselves carrying on greater numbers of professional exchanges within the building and across schools as a result of teacher center use. Not surprisingly, most of the exchanges turned around materials. Here are two excerpts illustrating within-school and across-school exchanges:

> All the stuff I get for the center is so handy. I bring a lot of things to other teachers too, and they do it for me. It's useful to everybody.

> Summer workshops are great for the exchange of ideas too. You can talk about each other's ideas and stay in contact. We've had a lot of teachers sending their units to one another.

The center also allowed users to "stay abreast with the field" and in many instances to feel "re-enthused," "rejuvenated" or "revitalized." These items recurred often. Below is a good illustration of how the center was seen by users to achieve such a result:

> You know, after you've taught for four or five years, you sort of get bogged down, in a rut. That's why it's good to go to a place like that center. There are so many new things, you just get excited about them and you want to try them out. Some of them work and some of them don't, but most of them do. It made me want to do something new in my class. I got exposed to things I never would have seen otherwise...like those kits and all the new ideas and the filmstrips.

Teachers also reported that they came to associate the center with "stimulation" and "innovation." In two instances, repeated use of the center was connected with the decision to do post-graduate work.

Table 4-2 Individual-Level Outcomes for Midwestern Site: Arcadia

LOCUS / OUTCOME TYPE	Teachers	Community College Staff	Teacher Center Staff (within College)
1. Shifts in status, power	Social recognition by college and peers Sense of professionalism	perception of increased local leverage	perception of increased local leverage influence with state administrators extension of reputation in region, state influence within college
2. Changes in linkage, networking	exchange of materials exchange of advice, materials	more within-department and between-department collaboration	more intensive, orchestrated collaboration within and between departments: teaching, projects, exchange of resources
Within Unit Between Unit	exchanges: materials, problems, experiences	more collaboration between colleges and schools	tighter bonds ("on call") to district schools, other T. centers, other colleges and universities and to local and state officials--extended network
3. Personal and professional maintenance and growth	source for continuous updating "rejuvenation", "revitalization" stimulant, crutch, support for attempts to improve practice pursuit of professional training		greater sense of responsibility for local school practices - more dispersion, overload
4. Financial maintenance and growth	maintain contract - meet in-service requirements		
5. Changes in goals, objectives	more self-direction for pupils less reliance on texts, greater diversity of mat'ls More individualization more integration of curriculum	shift to concern for in-service practitioners interest in special programs for retraining, upgrading	more concern for local practice improvements
6. Capacity Changes Knowledge Acquisition Capacity	New resource for materials, ideas, training Rapid source of solution to problems Access to other training opportunities in state Testing ground before ordering series		Access to resources Access to local teachers and admin., to state administrators Access to expertise in other colleges and universities Access to other Teacher Center coordinators in state in U.S.A.
Problem-Solving Capacity	Immediately usable; it works Aids "survival" of new teachers Trial and follow-through on new practices		
7. Practice Improvement	Enrich instructional materials, curriculum Stronger in weak areas Diversity in classroom organization Sense of heightened instructional effectiveness Use of environments (e.g., nature study area) not previously exploited	Instructional improvement - more "practical," "responsive"	Improves teaching - hands-on work - less theory, less coverage
8. Stockpiling Knowledge Resources	Enhancing general culture - extending range Building stock of ideas Augmenting substantive knowledge: poetry, energy, science Better understanding of own pupils	Information, documentation through Teacher Center	Personal use of resources in Teacher Center
Material Resources	Accumulation of kits, formats, simulations, series, exercises, projects Accumulating pupil-made materials	Materials available through Teacher Center	Personal use of resources in Teacher Center
Skills	Observed, learned about "new approaches" Diagnostic, observational skills	Building up consultant skills	Gain in research utilization and consultant skills for administrators Development of marketing, self-marketing techniques
9. Attitude and Value Changes			Developing sense of community "family"

underlines denote a claim made by more than two informants and/or observed by field analyst

This theme - the acceleration of practice change through the center - also recurs. In some cases, teachers are programmatic; the center served as a "crutch" or "stimulant" to carry through on changes that were overdue. The ways in which the center organized its activities so as to effect and consolidate practice change is also noteworthy. Here is an excerpt from a participant at the one-week summer workshop:

> You get involved in it so you really do carry through with it and you do a lot more with it than you might have done...You get a start on it. There's also the pressure of really following through on it in the classroom to get the other credits...You stay with it.

In other cases, changes were more subtle. The drift of these remarks was that pupils had more self-direction ("I let kids do more on their own"), that a greater variety of materials were used, that instruction was more individualized and curriculum more integrated. Most of this had occurred through the materials borrowed from the center or as a result of subject-specific workshops. Respondents were sometimes surprised when they reviewed these changes and saw how the center had induced many of them, but they insisted that they had maintained their basic instructional style and congenial mode of classroom organization. The general theme was that of picking and choosing from what center staff proposed.

The increments reported under capacity changes in Table 4-2 are straightforward. Center staff and materials were perceived to provide rapid, efficient solutions to classroom problems and to sustain practice change. New teachers said they depended on the center "for survival," and often arranged for long telephone calls or consultations with Lessing and Smetana to get advice. Similarly, there was strong consensus on the several types of practice improvements reported in Table 4-2 (#7). The remaining individual outcomes are self-explanatory. It is striking that no attitude and value changes were reported as such, but several of these may have been nested in other categories (e.g., heightened sense of professionalism, more self-direction given to pupils).

Turning now to outcomes for Arcadia State staff, it is remarkable that one operation in a single department of the college would have any individual impacts beyond that unit. As the table shows, these effects are of two types. First, staff members reported more exchanges as a result of center use - exchanges within and across departments and exchanges with local schools. The greater sensitization to and

interest in an in-service public also appeared in interviews with staff from other departments who had collaborated in a special project. An illustration from an instructor in the art department:

> I enjoyed working with older students and I'd like to continue working with them. And I guess I'm more aware of that outreach function than I was before and I've become more interested in it.

The second type of effect for college staff was more pervasive. By using center materials and facilities, staff from other departments began to adopt a more materials-centered, hands-on approach and found it instructionally beneficial, just as Lessing had when he originally organized his coursework around kits and simulation exercises. These changes were strongest in the music and physical education departments. Center staff said, "It's a pleasure to see them sort of patterning on us."

The individual-level outcomes for teacher center staff bear close reading. Perceived linkage and leverage increased both within the college and within surrounding school districts, a finding supported by informants in both settings. Center staff also became more cosmopolitan (see#6), notably by gaining access through the state-wide network to peers and experts in other states. Under skill enhancement (#8), Lessing saw himself as a better process consultant and entrepreneur as a result of coordinating the center. He also felt that the enterprise had strongly reinforced his commitment to the community of practitioners in the area.

The chart contains only two instances of a negative outcome, which is in itself suspicious. As mentioned in the opening section, cross-checking, theoretical sampling, even probing specifically for warts yielded little negative data at this site. But interviews with Smetana and Lessing did turn up evidence of trade-offs with some negative effects, albeit slight ones. Smetana admitted to role overload, noting that she and Lessing probably put in nearly double the time they were paid for. She was anxious to streamline, if possible, consultations with drop-ins, telephone requests, visits and arrangements for use of the center by other faculty members. She also thought that the hands-on, materials-centered approach had some costs:

> I feel like I'm short-changing them on theory, on their getting a larger focus...I find that I'm covering too little when so much time is spent on activities.

Note, however, that this remark refers to the pre-service program rather than the in-service activities. Lessing admitted to some dispersion, and felt that he "worked a little less" on course preparation for pre-service students. "And I read less."

4.2.2. Organization-level Outcomes

Table 4-3 shows the full set of outcomes arrayed by category for the school district and community, then for the college. To review them briefly:

Outcomes at the level of the school building aggregate most of the individual-level outcomes already reported. Schools reported enhanced social recognition, a greater number of exchanges and discussions within and across schools, and a collective sense of repertoire expansion stemming from use of the teacher center. Through the center there were also increased links with other professors at Arcadia State, whereas most teachers had previously dropped such contacts at the end of their pre-service training. Superintendents also said that teachers were now demanding increased in-service activity in their districts. The center had become the school's chief, if not main, source of documentation, expertise, training and materials. Reports of school-wide instructional practice improvements centered on the upgrading of diagnostic skills, adding breadth to curriculum, diversification of materials and greater integration of the curriculum. The center came to be seen "as an extension of our school," more so for primary-level teachers than at the secondary level.

From the perspective of the eight district and country offices affiliated with the center, the most important outcome was the creation of a virtually no-cost and "routinized" structure for access to the college in general and to the teacher center in particular. There was also evidence that in-service training had a higher priority in the district office, leading to a small increase in the number of workshops offered by district administrators. Superintendents perceived access to the teacher center to have increased teachers' professional capacity significantly. Recruiting teachers for rural schools was also eased by the attractiveness of membership in the teacher center. In general, linkage and interdependency grew markedly between the school district and the education department of the college.

Table 4-3 Organization-Level Outcomes for Eastern Site: Arcadia

OUTCOME TYPE	LOCUS: SCHOOL AND COMMUNITY — School Building	District and County Offices	Community	COLLEGE — Elementary Education Department	Psychology and Section - Education	Other Departments
Shifts in Status and Power	Social recognition from investment made by college	Social recognition from investment made by college		Enhanced reputation Increase in physical space Increase in bargaining chips	Recognition within college Approval for expansion Recognition within state	Status enhancement via collaboration with "dynamic" center
Linkage	Increase in exchanges of materials Increase in profession discussion			Sustained institutionalized contact between staff, between staff and students Physical regroupings of staff	More collaborative projects More integrated teaching	
Within Units						
Between Units	Increase in between [illegible]	"Routinized" structure for access to college - largely informal (of individuals)	Intensified link with college	More collaborative projects Integrated teaching	More collaborative projects More integrated teaching	
	"grooved" structure for access to college Increased links in college beyond pre-service phase	Implicit notion of exchange, involving personnel in schools, districts and college				
Organizational Maintenance and Growth	Sense of "sharing interest" with field Collective sense of "mind budget" [illegible] expanded Support system for teachers	Perception of increased staff professionalism	Increase in facility available to [illegible] groups	Staff increases Plans for extension of program, new certification Group support from university president, deans Increased funding for staff, materials, space	Increase in staff, [illegible] students Plans for further increases Heightened institutional leverage	Overall facilitation of recruitment
Financial Maintenance and Growth		Virtually free use of teacher center materials, training, consultation		Increased budgeting for staff, materials, space	Increased budget Plans for further increases	Maintenance of budget despite small recruitment pool
Changes in Goals and Objectives	Increased demands for local in-service	Higher priority for local in-service		Shift to major in-service program	Furthering "outreach" mission	Increased in-service activities for district
Changes in Institutional Climate	More collaborative climate: more sharing More professional enthusiasm		Stronger support for college	Cohesion Sense of "family"	Greater cohesion Collective pride	Incipient criticism of "[illegible] in other departments" areas of expertise
Capacity Changes						
Knowledge Acquisition Capacity	New (virtually sole) source of documentation, expertise, training, materials Access via teacher center to regional documentation, training	Dramatic capacity increase via access to teacher center resources		Use of external experts for pre-service work Increment in materials, space available for pre-service program	Structure for access to practitioners Access to widened back materials, space, equipment	
Institutional Problem-Solving	Perceived support, expertise for school-wide attempts to innovate	Resolution of conflicts Facilitating decision-making				Perception of a local "model" for improvement of pre-service and in-service programs
Capacity to Compete		Enhanced recruitment for more remote schools		Victory in competition for recruitment of students Advantage in placement of grads	Improved recruitment and advantage in job placement	
Institutional Practice Improvement	Upgrading diagnostic skills Breadth to curriculum Diversity of instructional materials Integration of curriculum	More offerings for local in-service		Strengthened pre-service program; materials, space, expertise, staff	Use of materials-rich, "hands-on" instructional environment Use of equipment (video for [illegible], ed. CMAS) Additional instructional space	
Stockpiling						
Knowledge Resources	Access to new educational environments (field sites) Local appropriation of teacher		Use of new environments (nature studies acc)	Teacher center resources are part of department equity	Ordering, gaining access to instructional materials, equipment, space, expertise	
Material Resources	Center resources: "like an extension of our school"		Use of college facilities (including formal			
Skills						

There were some minor effects of teacher center activity on the community surrounding Arcadia State. The center provided facilities for meeting which were otherwise unavailable in the town, and began to reach out actively to community groups (e.g., the art gallery project for area residents and the micro-processor project for farmers). The nature studies area served the community and led to closer collaboration with the parks commission.

Since the elementary education department - a subdivision within the education and psychology department - contained three members having their offices in the teacher center and teaching at its facilities, impacts were strongest here. This sub-section was the object of enhanced prestige and of increases in facilities and staffing; it also amassed a number of bargaining chips for future institutional negotiations. Exchanges were intensified between staff, mainly through cohabitation, collaboration on special projects and team teaching. Along with staff increases (a full-time program assistant on college budget), there were plans for the creation of a M.A. level program in elementary education, built around the center. The staff shifted to a more pronounced focus on extension and added a wealth of materials and equipment to service this public; these resources became part of the department's "equity." The unit also became a strong competitor for freshmen majoring in elementary education in the region and maintained a high placement ratio for graduates.

Finally, and most important to center staff, in-service activities strengthened the pre-service program by creating closer links with area teachers, facilitating access to pupils for clinical work and enriching the repository of instructional materials.

The list and extent of effects accruing to the psychology and education department are striking. Through the center, the department acquired an enhanced status within the college and the state. There were increased and more consequential contacts with the State Office of Education. As department chairman, Goff negotiated for the center a mandate to design and pilot a program on nutrition education for the state and another contract to devise materials for multi-grade teachers throughout the state.

Two other sets of outcomes are noteworthy. Collaboration between department members increased through their involvement in special programs

conducted at the center. There were also indications of more such programs and further increases in staff and budget as the department shifted more heavily to in-service offerings. Also, the center provided a vehicle for access to local schools on which the department began to draw, often as a spin-off from extension activities sponsored by the center and organized by Goff. Finally, there was strong evidence that facilities of the teacher center had helped to improve course work by virtue of the wealth of resource materials, the informality of the setting and the availability of audio-visual equipment.

Looking finally to other departments at Arcadia State, there were some modest effects. As the center's reputation grew, college staff who had used the center's facilities to teach from or had collaborated on a special project were seen as more "dynamic" and "innovative." Inter-departmental collaboration grew, notably between the psychology and education department and others who also focussed on elementary-level personnel. Other departments began to look more closely into extension activities, using the center as a promising model. In fact, the Arcadia State "model," as illustrated by the teacher center, began to gain currency in other colleges in the state. Finally, those instructors using the center for teaching felt that the materials-rich, hands-on approach bore fruits in terms of students' motivation and retention.

There were glimmerings of at least one negative effect in the form of intra-college doubts about the substantive expertise of center staff in areas which would normally have been covered by other departments, such as science and social studies. One or two departments spoke of "trespassing," possibly as a self-protective devise to rein in somewhat the galloping expansion of the center.

Institutionalization. An assessment of the degree of "routinization" at Arcadia is given in Table 4-1 (see section 4.1.2). Arcadia compared favorably both with the Three Rivers center and with the remaining seven centers in the statewide network. There are, in fact, no fault lines as one reads down the column. The Arcadia center had become a core function for teachers in their yearly cycle - "an extension of our school" or "sort of automatic in my teaching." It was firmly nested in the state college and appeared, in fact, to be expanding

its space and operations in the fifth year at the same rhythm as during the initial two years. It provided payoffs not only to its staff and to school districts, but also to the college administration (as a facilitator of recruitment and source of funds through special programs and workshops) and to several college departments (as a facility for teaching). It had clearly outdistanced the nominal in-service activities offered by district and county administrators. Its institutional support was strong on all fronts.

The center also weathered the transition from a pilot venture to a routine organizational unit. Gibb Foundation funds had been replaced by college support. As Goff said in the fourth year, when external funding had dropped to $4,200:

> There's no problem covering that on the college budget, especially with the special projects there too...We've also found the money to hire Joy (Willard) full-time.

There was also a provision for modest growth of the center in the college's five-year plan. In addition, supplies and maintenance were covered by the state college budget; Goff was able to draw on library funds for the purchase of some teacher center materials. Finally, the center had been formally incorporated in the college register. It was not built in nominally to the surrounding school district regulations, but this made no practical difference and there was a proxy here: the center was formally authorized by administrators in the eight districts to grant contract recertification credits.

The center also appeared to survive with apparent ease, the annual budget cycles and to have been strengthened by the addition of new personnel (Carla Smetana, Joy Willard). Some informants speculated, however, that were Lessing to leave, which was unlikely, the rate of growth would slow considerably, but without jeopardizing the continuation of the center. Finally, the center was widely used in the eight participating districts, although less so by secondary-level teachers, and had become a keystone of the education and psychology department. One heavy user of the center put it this way:

> I suppose it's foolish to say this, but I think that even if they closed the college, they'd have to keep the center open. There's such a demand for it.

Negative outcomes. None was apparent, save the one item mentioned earlier, namely the drawing of territorial lines by at least one department who contested, as yet informally, the expertise of the teacher center to give workshops in energy education without using science department staff.

4.2.3. A Map of Linkage-related Outcomes

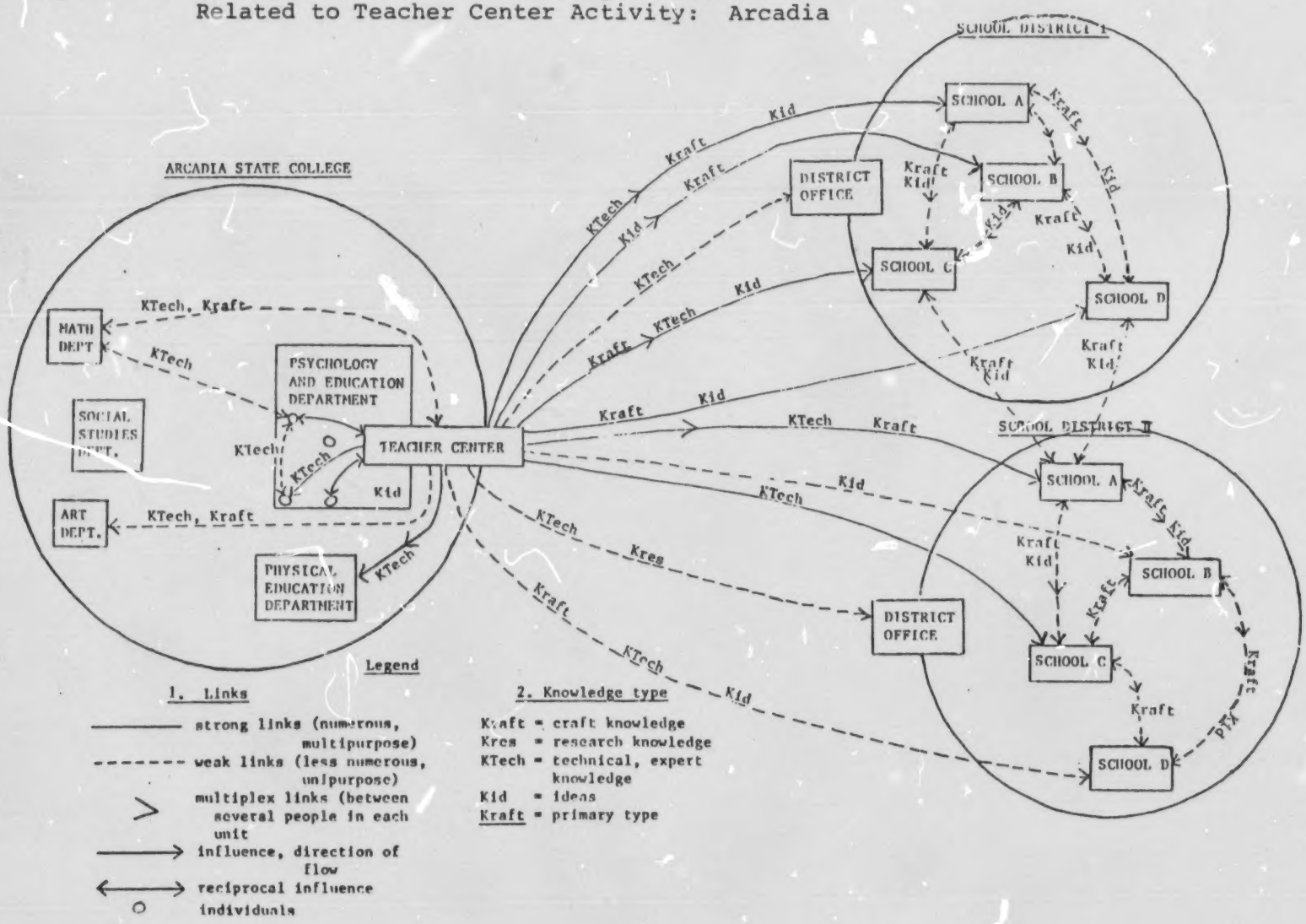
Figure 4-1 tries to pull together some of these strands by showing the relationships between members of the Arcadia arrangement in terms of knowledge transfer and multiplicity of links. The reader should start by getting familiar with the legend.

Beginning with linkage and flows of influence, it needs to be stressed that these links were increments over the situation preexisting the teacher center. Typically, links now shown as strong had been weak previously, and links now shown as weak had been nonexistent or very infrequent. The inference is that these links would not have existed or would have been far more episodic were the center not there.

Looking within the state college, several linkage types are displayed (not all departments are shown). Links with the math department were infrequent and unipurpose (although this began to change near the end of field work), and they were reciprocal; math professors helped summer students and organized a workshop, while the center provided facilities and workshop enrollments. Only one person in each unit was involved.

Links with the art department were also unipurpose and involved one individual in each unit (A. Migros and D. Lessing), but most of the assistance was given by the center. On the other hand, there were stronger and more multiplex links with the physical education department. More than one staff member used the center and the collaboration was multi-purpose (participating in a common project, using the center facilities and video equipment). Physical education staff helped the center (e.g., with the purchase of skis for the nature study area), but the dominant direction of assistance flow was from the center to department members. Finally, there were no links with the social studies department, although there had been one or two isolated exchanges, e.g., a staff member of that department came to the center looking urgently for materials to aid with coursework.

Figure 4-1 Linkage Patterns and Knowledge Flows Related to Teacher Center Activity: Arcadia



Within the psychology and education department, absent ties have become weak and weak links have become strong links as staff members used the center as a facility for their courses or as a storehouse of supplementary materials. Most of these links were reciprocal; department members assisted with special programs organized by the center and helped with summer workshops as leaders or advisors for teachers doing individual projects.

Staying with the psychology and education department, two new ties appeared. First, department members worked more closely or more often with other department members, often in the conduct of a program at the center. Secondly, there were new links between departments as a result of the center. For instance, the math department got together with the psychology and education department to organize the micro-computer workshop. There may have been more interdepartmental links than are shown here; the data were too thin to make an estimate confidently. But, it is unlikely that the center multiplied between-department links to a great extent. For one thing, little energy was put into such an objective.

Before moving to the schools, note that teacher center-community links are not shown here. We would estimate them as weak, but multi-purpose, which is a unique combination.

The linkage patterns are slightly different between the center and the two illustrative school districts. In both school districts, links to administrators were weak. Nor did the center strengthen ties between district offices and local schools. On the other hand, more numerous contacts between teachers in different schools and different districts resulted from the center, as did within-school exchanges (not shown in the figure).

In school district I, linkage was strong and multiplex between all schools and the center, with the center providing most of the inputs. (In fact, the figure is somewhat confusing in that flows of influence and knowledge make it seem as if the center reached out into schools, whereas it was more the case that teachers came to the center.) School district II may be farther away. There are weaker links drawn to two schools, which might have been secondary schools. The link to school C is not multiplex; contacts would have been limited to one or two teachers and one staff member at the center.

It is worth pausing a moment to assess the absolute strength of these ties between the center and area schools. Whereas ties had existed during pre-service training before the creation of the center, they were unipurpose (meeting with elementary education staff to discuss the supervision of interns assigned to local classrooms) and limited to one year. Now, the interaction between the pre-service program and in-service assistance was stronger, as in the two-week visits to the center and the nature studies program. Also, area teachers were often coming to the center first for materials, then possibly for a workshop, then for more ego-invested contacts such as help with classroom problems or areas of weaknesses. These multiple contacts created tighter interpersonal links, which were already strong as a result of frequent informal contacts in a small rural region and pre-existing relationships when the in-service teacher had been a pre-service student at Arcadia State. More numerous and multiple ties created greater dependency on the part of teachers, who then made gestures of reciprocity, e.g., donating equipment or furniture to the center, serving as delegate to the policy board, supporting the center in conflicts, facilitating placement of pre-service students. These gestures, in turn, strengthened interpersonal and interorganizational relationships, further tightening links, and so on.

Knowledge types followed a predictable pattern. Note first how little research knowledge flowed to or from the center, even within the state college. The one instance shown on the figure was the result of a request to the center from a district administrator (shown here in district II) trying to make decision on class sizes for the following year. Within the college, most transfers involved technical knowledge, usually connected to a workshop, special program or materials.

As many of the materials were the product of considerable development and piloting, they are the chief source of technical knowledge that flowed from the teacher center to area schools. Other technical knowledge came through workshops, two-week visits, and consultations. Teachers also drew on the "ideas" section of the center - the area most heavily used - to enrich and integrate curricula. Other materials and some workshops at the center were more in the form of recipes-lessons, formats and products that had "worked" for their developers

and were communicated in booklets, packets or workshop exercises. These lore or craft knowledge inputs were also collected by area teachers and communicated within and between schools. In addition, links formed at the center during a workshop or visit led to between-teacher exchanges of ideas and experiences that were not mediated by center staff.

4.3. OUTCOMES FOR THE THREE RIVERS TEACHER CENTER

As for Arcadia, outcomes are arrayed by category on the appended fold-out charts (see tables 4-4 and 4-5). Our commentary will follow outcomes successively down each column.

4.3.1. Individual-level Outcomes

Overall, for teachers, the trend is analogous to Arcadia, but with a lower magnitude of effects. One exception here is the status/power category; Three Rivers teachers dwelled insistently on the fact that the center allowed them to get M.A. level credits more easily and in more teacher-usable form, that being a workshop leader brought status to themselves and their principals and that the university's investment in the teacher center reflected favorably on the status of their profession. As one informant said,

> It's important for us that the university gets involved with teachers beyond the B.A. It's flattering, I guess, but also it makes us become more professional about our work.

With regard to linkage and networking, teachers reported moderate increases in within-building collaboration and small increases in between building exchanges. Both levels were lower than at Arcadia. So were the indices of professional growth, updating, stimulation and desire to make instructional changes. Informants made modest but convergent claims in these areas. Below is an illustration from a multiple user of the center:

> If there were no center, we'd just get a skeleton of in-service. And there'd be fewer ideas for the classroom, maybe less change too...I know for me at least there'd be a lot less growth and less thinking about what pupils are doing. Sort of less professionalism.

There was also evidence of a cathartic effect that was absent at Arcadia. At least three teachers reported - and center staff confirmed - that workshops had occasionally lapsed into "gripe" sessions against building and district administrators, the theme being that administrators hampered professional development. The tone was not strident or the phenomenon as marked as in the initial years of the center. Some of this had to do with a breakdown in negotiations over contract renewal in 1979-80.

The table shows evidence of financial advantages stemming from use of the center and minor changes in instructional goals, usually in the direction of integrating curriculum and giving greater pupil self-

Table 4-4 Individual-Level Outcomes for Three Rivers Site

OUTCOME TYPES \ LOCUS	Teachers	University Staff	Teacher Center Staff (outside university)
1. Shifts in status, power	Acquisition of post-graduate degrees Professional recognition as teachers of teachers Social recognition of teachers by university		Perceived as source of expertise on practitioner needs, characteristics, formal conduit for contacts between university and school
2. Changes in linkage, networking Within Unit	More in-building collaboration		
Between Units	Contacts, exchanges of materials, experiences	More frequent exchanges between University staff, local schools	Extended network to other teacher centers, colleges, state officials
3. Personal and Professional Maintenance and Growth	Professional growth Updating Extension, stimulation, desire to change practices Catharsis for conflicts with administrators		
4. Financial Maintenance and growth	Source of salary increment Maintain contract	n.a.	n.a.
5. Changes in goals, objectives	Minor revisions in instructional goals	Reinforcement of service/outreach mission	Accelerates crystalization of career goals - displacement of "personal consultant" goals to organizational maintenance goals
6. Capacity Changes Knowledge Acquisition Capacity	Extension of resources available for materials, training Access to best products in district	Teacher center as additional resource for course work	Access to Teacher center materials Access to local, statewide administrators Access to other college, university expertise Access to Teacher center coordinators in State, U.S.A.
Problem-Solving Capacity	Aids "survival" of new teachers Trial of new ideas, materials	Improved mechanism to disseminate new practices in schools: piloting, training teachers, gaining widespread implementation	More skillful as consultant to teachers, school administrators - overwork, burnout
7. Practice Improvement	Enrich instructional materials, curriculum Diversity in classroom organization Stronger in weak areas (1 aerial) dramatic increase in pupil motivation, achievement gains	Teaching more sensitive to practitioner concerns Redirection, strengthening of research foci	Teaching sensitive to practitioner universe
8. Stockpiling Knowledge Resources	Building stock of ideas Augmenting substantive knowledge	ordering, conceptualizing craft knowledge	personal use of Teacher Center resources
Material Resources	Materials production	logging of Teacher Center resources	Personal use of Teacher Center resources
Skills	Access to best practices in district		Building up consultant skil Building up administrative skills
9. Attitude and Value changes	Taking the role of the pupil Heightened "unionism"	More complex vision of school practice More open to dissenting evidence	More tolerance for teachers shortcomings More empathy for teacher needs for security and structure

Underlines denotes a claim made by more than two informants and by field analyst

direction. The same indices cropped up at Arcadia and attest to the influence of the Experimental Program on the centers. Stronger claims surfaced for increases in instructional capacity. Informants, notably elementary school teachers, insisted on the utility of materials exchanged during one-time workshops. Several saw this as "a really good way to get to the best things that are being used in the district." This is a good illustration of the differences between the two centers. For teachers at Arcadia, the center was the best repository of instructional materials; for Three Rivers teachers the center was more a linking agent that matched teachers who had developed instructional resources with those that were looking for more.

As at Arcadia, new teachers were grateful to the center for helping them "to survive." Many of the one-on-one consultations were with these teachers. Through workshops as well, new teachers had access to veterans with whom they stayed in contact. The following excerpt illustrates this point:

> I know that the new teachers feel they wouldn't have known how to get along without it. It really helped them to learn the ropes and to get together with teachers from other schools they'd never meet otherwise.

Claims in the areas of practice improvement indicated on the table were strongest. The center, notably through the one-time workshop series, provided access to a richer store of curriculum materials, new ideas for grouping pupils and otherwise organizing daily classroom work. These two themes also emerged from a survey of teacher center users conducted by a graduate student at North Central. What did not come through in the survey but was generally reported during interviews was teachers' sentiment that they felt stronger in areas of weakness, usually science, mathematics or social studies. In only one instance, however, were there claims of major classroom reorganization or dramatic gains in pupil motivation and achievement. This case, the micro-processor project,will be described below (see "micro-computer serial" in section 6).

Finally, teachers who were interviewed were unanimous in reporting that activities at the center had increased their own storehouse of materials and instructional ideas. They attributed this less to the drop-in and materials-borrowing facility at the center than to the one-time workshops. Attitudinal changes were slight.

Three informants said that they now could take the pupil's perspective more easily, as a result of the workshops in which teachers used the same material or did the same exercises as pupils were meant to do (another practice common to Three Rivers and Arcadia). And one informant, saying that others were of the same opinion, felt that workshops on professional themes had made her slightly more militant in insisting on teacher's rights.

Looking now at individual-level outcomes for university staff at North Central, we can see at a glance that effects are smaller than at Arcadia. Two informants reported modest increases in contacts with local schools as a result of service at the center (e.g., holding a workshop, helping to create an activity center). All university staff felt that the center was a tangible symbol of the college of education's commitment to local service and outreach. Some said they used the center to gain access to a larger storehouse of materials for course work and that giving workshops there sensitized them more to practitioners' perspectives. In two cases, university staff felt the center had proved a rapid and efficient relay system for the delivery of new products and practices they had developed. Finally, one informant with a stronger conceptual and research focus - and making claims for others like him - said that working with the center on a project had forced him to reconfigure his conceptual framework and back off classic experimental research paradigms in the face of a more complex vision of school practice.

The final column in Table 4-4 shows individual effects for teacher center staff. In fact, Grace Bush is the only informant here, and the cell entries show several personal and professional changes. Most are positive: increased status, networking, local and state-wide contacts, managerial and administrative skills and empathy for practioners' needs and shortcomings. There are two outcomes perceived as negative: the displacement of her energy from the consultant role to the administrator role and role overload.

4.3.2. Organization-level Outcomes

Table 4-5 provides a matrix of these organization-level effects, many of which are simply aggregates of individual-level outcomes. Reading vertically down each column, power and status gains for schools translated into heightened social recognition as a result

Table 4-9: Organizational-Level Outcomes for Midwestern Site: Three Rivers

LOCUS / OUTCOME TYPE	SCHOOL and COMMUNITY: School Building	SCHOOL and COMMUNITY: District and County Offices	SCHOOL and COMMUNITY: Teachers' Association	UNIVERSITY: Department	UNIVERSITY: Section/College	Other (F
Shifts in status or power	Initial recognition for RT schools, teachers - Slight status loss when principals lose direction of in-service	Rising enhancement; collaboration with university in innovative projects -Loss of control over choice of training topics, choice of trainees	Gain in professional status Local recognition by university		Status enhancement as originator, sponsor of statewide project	
Linkage: Within Units	Increase of exchange of materials Increase of lateral problem-solving		More cohesion, affiliation of interest group			
Linkage: Between Units	Increase in between building exchanges of discussions Incipient structure for access to university	More formalized structure for access to university -Weakening of old boys network between district and university	Source of contention with school administrators	More first-hand contacts with in-service teachers	Growing, formalizing links to local schools Increasing links beyond pre-service training	
Organizational Maintenance and Growth	Perception of growth - circulation of new ideas Collective egoes, of avoiding conflict, superficial expansion Support system for teachers	Acceleration of practice improvement cycles More rapid use of university knowledge and instrumentation	Ownership of teacher center resources	Concentration of service objective	Streamlining of Outreach to local districts and county	
Financial Maintenance and Growth	Freeing in-service budget for other offerings	In-service budget partially underwritten by external funds	"Easy route" to recertification, pay increases		Increased revenue via enrollment in & other center activities	
Changes in Goals and Objectives	Shift of principal to more purely administrative role Greater integration of curriculum	Higher priority to in-service training		Reorientation of research expectation		
Changes in Institutional Climate			Increased militancy	Overextension, exhaustion of staff		
Capacity Changes: Knowledge Acquisition Capacity	Increased resource base for materials	Exchanges, training, dissemination Best teacher practices			Extension of range of documentation available to students	
Capacity: Institutional Problem-Solving	Perceived support for building-wide attempts to renovate	Resolution of difficulties in choosing in-service opportunities				
Capacity to Compete		Enhanced recruitment for more remote schools			Increased access to state-level funds	
Institutional Practice Improvement	More curriculum breadth More diversity in instructional materials Integration of curriculum (1 serial) transformation of instruction across building	(1 serial) district-wide implementation of instructional aids piloted by teacher centers		Improvement of pre-service instruction: more courses, "grounded," better alignment with practice; new concepts; more grounded research	More rapid, efficient conduit for dissemination of new practice, products Improvement of special programs	conduit for
Stockpiling: Knowledge Resources	Local of teacher center (nonusing) "We can draw on all this."			Additional resource bank for course work		
Stockpiling: Material Resources						
Stockpiling: Skills						

of the university's involvement in the teacher center. Linkage effects were also present: increased within-and between-school exchanges and greater ties to North Central via the teacher center. For one informant, between-school links were forged in the following way:

> I guess it happens this way: the workshop is like a collector for people who are interested in the same topic. They get together at the workshop. Afterwards, they stay in touch and call on each other and exchange a lot of materials and talk about their problems.

For another informant, workshops were little more than a pretext for meeting other teachers. For another, the center was a refuge, a safe house for like-minded practitioners.

In many cases, teachers who had done their pre-service degree at North Central patronized the center more often. All informants mentioned this phenomenon. Teachers trained elsewhere appeared to be more vague and doubtful about the usefulness of the center. In classes at North Central in which course work included visiting the center (to borrow reference materials, to carry out an individual project), use was still greater once interns graduated to their own classrooms. Familiarity bred use.

Maintenance and growth effects recur in a form that was covered reasonably well under individual-level outcomes: sense of being updated, access to new ideas, successful combat of routine, expansion of instructional repertoires, creation of a peer support system. Building administrators could focus on areas not treated by center workshops, although most began simply to turn over the organization of in-service days in their building to the teacher center. Both teachers and principals felt that the center provided an increased resource base for schools, helped with building-wide innovations and added breadth and diversity to classroom instruction.

At the level of district and county superintendents' offices, positive outcomes were judged to be modest but an improvement over previous practices. Access to university practices and products was more rapid and promising practices in area classroom more rapidly disseminated. Since foundation and university monies helped to underwrite the center, internal funds could go elsewhere. There was some indication that in-service education now had a higher priority as a result of the center and that recruitment of teachers for rural schools was enhanced by the promise of continuous professional development,

but these claims may have been rhetorical.

Finally, outcomes at the level of the teachers' association were registered;they followed the line of remarks made by individual teachers. Note that the teachers' association played no role at Arcadia. The Three Rivers association appeared to have been reinforced by the center through social recognition, greater cohesiveness and eased access to recertification credits. The school board episode (see section 6) strengthened members' resolve to resist attempts to dismantle what they saw as one of their resources and, in that process, increased the association's commitment to the center. There were slight indications that the center, through its workshops and "sharing" sessions, had contributed to a general increase in teacher militancy throughout the district.

Effects registered at the university were generally weaker than those for the school district and considerably weaker than at Arcadia, where the center was nested within the state college. Looking first at the elementary education department, which had the greatest number of members interacting with the center - to some extent because Grace Bush was a teaching assistant there - increments were reported in the amount of contacts with local teachers and in the improvement of instruction for the pre-service program. Respondents said they had a better map of practitioners and of their concerns as a result of collaboration with the center, and that this carried over to their coursework. For one member, research foci had been re-directed and made more complex. For several, the teacher center was an opportunity to concentrate their outreach efforts on one universe.

At the level of the college of education, informants saw several advantages: status enhancement for having succeeded in creating the teacher center network, streamlining and multiplying links with area schools, generating new revenues through post-graduate credits, increased access to state-level funds,increase in course materials, inprovement of special programs (through consultations with Grace Bush), and the establishment of a more rapid and efficient conduit for the dissemination of new practices and products. This last item also appeared for staff in other faculties, who developed new curricula or materials and sought an expedient way of disseminating them to local schools. Apart from that item, there were no reported effects beyond

the college of education - another contrast with the Arcadia center.

Institutionalization. We refer the reader back to Table 4-1 on p.151 to compare Three Rivers to the network as a whole and with the Arcadia Teacher Center. The table hypothesizes that the Three Rivers center was not strongly institutionalized. Although its outreach was increasingly wide, its activities were not judged to be indispensable to district teachers and administrators or to university staff. Strong support came from the college dean, but other university-level backing was diffuse and did not compensate for fairly low levels of support on the part of school administrators. Only recently had teacher commitment solidified, but this may have been ephemeral and tied to a single issue. One informant reflected on this:

> What that meeting at the school board showed was that teachers may not be using the center all that much, but they didn't want it taken away. They wanted it there as a resource. They wanted to keep it even if they weren't using it.

Rewards accruing to teachers were numerous and concrete, but modest. Informants were more muted than at Arcadia; the center appeared to have made less of a difference in their classrooms. There were also rewards at the administrative level: the center took over and expanded in-service, thereby filling a void that principals were eager to fill. To cite from an interview with a principal:

> Principals used to be a lot more active in curriculum reform and in-service, but over the years we've had to do a lot more administration and paperwork. So we've spent less time of those things. There's a void there, and the teacher center has moved right into it.

The center also serviced the district with external funding and freed up money for use in other areas of concern. But these payoffs were intermixed with reservations about the whole enterprise. Also, most district administrators had other ways of getting to the college of education - relying on informal relationships - than through the center, which robbed the center of an important source of leverage.

Few university staff profited directly from the center, although there were institutional payoffs in having an intermediary agency to recruit teachers and organize in-service, to generate revenues through enrollments and to act as a conduit for the dissemination of new programs. Rewards to center staff were meager, as reflected in the high rate of turnover and in complaints of role overload.

Stable funding was uncertain. One informant felt that when the school district took over majority funding of the center, it would be "the kiss of death."

> I just give the center a few years to live. The superintendents just don't support it all that much; that's why they tried to cut it out of the budget. When they pick up the center's budget, they'll make it a much smaller operation and spend the money on something else.

Others reasoned that the victory at the school board meeting had solidified the financial base of the center, although the budget had been cut back for 1980-81. Overall, it seemed ironic that when the Three Rivers center had finally become visible and useful to a large number of area teachers and principals, and had created durable links with a small set of university staff, its institutional and financial base still appeared fragile.

4.3.3. Negative Outcomes and Costs

Disincentives at the individual level seemed limited to role confusion and overload on the part of teacher center staff. At the institutional level, the following items are noteworthy:

- for the teacher center: goal displacement of teachers to large-scale workshops taken essentially to accumulate recertification credits;
- for college staff: overextension of some members of the elementary education department, who added the teacher center to an already long list of outreach commitments, with ensuing sacrifices to the quality of coursework (e.g., more seminars taught by teaching assistants);
- For school administrators: loss of control over the choice of in-service topics and instructors, some loss of status to principals in transferring in-service to the center, increased friction with teachers as a result of disagreement over the priority of the teacher center.

5. THE FUTURE

5.1 FUTURE OF THE STATEWIDE NETWORK

Predictions are, of course, speculative. In this instance, the on-site consultant provided predictions that were tested against analysts' projections for the network as a whole. They can be laid out briefly.

Institutional patterns. If the network receives federal funding, which appears likely, it should be able to cover the state with 11 centers. Not all will prosper and one or two may dissolve for lack of strong local leadership and lack of support from school district administrators. The network itself is likely to endure as a state-level forum and as a federation of autonomous and site-specific local centers.

Objectives and needs are likely to remain in the present configuration. The network and its centers are pluralistic but activist, which is a robust formula for continuation. Coordination between centers is likely to grow as the state channels more programs and in-service efforts through the network. There will be a healthy tension, in all likelihood, between local demands and state-initiated projects.

Staff turnover within individual centers may be endemic to the enterprise. Coordinators span boundaries among three parties - the college, teaching staff, and district administration - and tend to seek career pursuit in one of the three, using the center as a transitional way station. Turnover is likely to be lower when centers are more firmly rooted in, and institutionally claimed by, one of the parties. This formula appeared to work well at Arcadia, where the center was part of the college and the coordinator devoted virtually full-time to center activities. In contrast, institutional orphaning occurred at Three Rivers, where the coordinator spanned three worlds but could not root the center firmly in one of them. Frustration over this state of affairs, combined with the perception of an occupational dead end, have lessened the likelihood that the Three Rivers coordinator will continue.

Resources are likely to remain scarce, even with federal funding. This is likely to heighten institutional fragility at the newer centers and reduce the activity mix that is otherwise expected to remain the same.

Interorganizational dynamics should not shift radically. However, we can expect increased levels of conflict over the distribution of federal funds, as each center looks to its own survival. There may also be sharper conflicts over territorial issues, as the pool of in-service trainees continues to diminish and centers geographically close to one another compete for enrollments. This may give way to a semi-contractual agreement on territories or a functional division of labor (e.g., one center handling language arts, another science). Alternatively, one center may unintentionally drive another out of business.

Finally, as the centers move from external to internal funding, they may be caught up more in internecine struggles between member organizations.

5.2. VIEW OF THE FUTURE AT ARCADIA

Relatively little interviewing time was devoted to predictions of future contextual or operational changes. A more rigorous exercise in prediction-making was done at Three Rivers (see section 5.3) but not at Arcadia. However, there were segments in the field notes that can reinforce the speculations that follow.

Changes in institutional patterns were likely to be minor. There had been requests from additional counties to join the teacher center, which presented Lessing and Goff with the dual dilemmas of overload and overpopulation of the policy board. A tentative decision was made to expand membership and to rotate delegates to the policy board. If, however, an M.A. program were authorized, there was the possibility that workshops would become more structured and more demanding.

Changes in needs and objectives. Some evolution was going on here at the close of fieldwork in November, 1980. There were four major thrusts. (1) First, the center was concentrating more energy on outreach directly in the schools. There were plans to demonstrate new modes of classroom organization and the use of new materials by going out to schools from which only a few teachers had participated in the two-week visits to the center where these techniques had been modeled by interns. If more money became available, a new person would be hired as a "field agent" for the center to communicate and follow up on requests from area teachers.

(2) A second area of development was outreach to the community. Plans were afoot for an art gallery for area residents and for computer software for area farmers. The center had developed the nature trail, provided more facilities for community groups to meet and was helping to organize a cultural festival (a chautauqua) in the region.

(3) Lessing was beginning to experiment more broadly in the domain of peer teaching in in-service training. Up to now, fellow teachers had only taught one-time workshops. The multi-grade teacher training project had been designed to identify, film and use as course instructors a corps of "master teachers" throughout the state.

(4) Finally, the teacher center was beginning to service state-level educational needs. It had contracted to play a major materials development role in both a multi-grade teacher training project and

a nutrition education project. There were negotiations for Arcadia to participate along with other centers in the network in a state-funded program in art and music. Visits and phone calls from state officials had become more frequent.

Changes in personnel were unlikely, except for the possible addition of new staff as programs were expanded and center staff over-extended. As noted earlier, a staff member of the art department was soon to move into the center and become part of its staff. Resource levels were likely to grow as a result of program expansion, the increments for the center contained in the college-wide five year plan and the possibility of two additional sources of funds: a grant proposal to extend the nature study program (see the "nature study serial" in section 6) and the statewide teacher center network proposal for federal funding. There was also the strong likelihood of additional space and the further development of the materials bank. Two uncertainties remained nonetheless. First, sharp cuts in federal funds could eliminate both grant monies and the statewide network proposal. Next, continuing reduction in enrollments at Arcadia State, as the birth rate declined and more families moved to larger cities, would affect levels of support from the college budget. Although the psychology and education department had already made the shift to greater in-service activities, other programs remained almost exclusively pre-service and were likely to enroll fewer college freshmen. This would depress the overall college budget.

The shape of future activities was more predictable. Shifts in objectives would call for more effort in outreach directly into the schools, more activities aimed at non-educators in the area, greater collaboration with the state education agency and further attempts to use the teachers-teaching-other-teachers format. Otherwise, there were several extensions planned for existing activities: an increase in the number of summer workshops from eight to thirteen, the development of activity in the area of micro-processors, the extension of the energy education program with workshops, displays and a focus on solar energy and coal development using scale models; the proposed art gallery; the intensification of the special education project by developing a program for gifted pupils in three counties surrounding the center; the extension of the materials bank for Indian studies with the creation of a North Dakota room housing displays and resource

materials; and the extension of the nature studies project to a wider audience if the proposed grant were funded. What is striking here is the pace of program extension, not only in the creation of a new project or focus but in the continuous expansion and differentiation of existing activities.

Future interorganizational dynamics may be more elusiveto predict. Consensus was likely to remain strong; all parties had strong incentives to continue the center's mandate. Some conflicts over domains of expertise within the college were expected to surface, but the policy of co-opting college staff for special projects and of offering the center's facilities for coursework were likely to maintain high levels of support for the center within Arcadia State. In terms of bargaining and power, the psychology and education department was expected to grow more influential as a result of the center's expansion and the rapid development of extension activities, for which the department was responsible. Few shifts in knowledge transfer patterns were likely, although the approval of an M.A. program could render more academic much of the center's teaching. Approval of that program would also increase the staff of the elementary education sub-division by two to three members, thereby improving the teaching and service capacity of the center but making it difficult to maintain the personalized and communal character which, in many ways, held the whole enterprise together for its staff, pre-service students, and participating school people.

5.3. VIEW OF THE FUTURE AT THREE RIVERS

We did not interrogate respondents at Three Rivers about the future. However, several persons raised the issue spontaneously; their concern was whether the center would survive staff turnover and lowered levels of funding. In addition, the on-site consultant at Three Rivers, a resource colleague housed in the university and assigned to the Three Rivers center, made predictions in all the areas listed below.

Immediate changes in institutional patterns were unfavorable. Center personnel felt "just able to keep (our) heads above water" with the multiplicity of activities to organize with a skeleton staff. In that respect, the reduction of center hours and months (from nine back to seven) may have been a boon, but it was perceived less as a sign of retrenchment than of decline. By the end of 1980-81, policy board members appeared to be tired out and unable to make decisions rapidly. Most were too involved elsewhere. For instance, it was difficult to find a president for the policy board.

Changes in needs and objectives were unlikely. The on-site consultant predicted that "activities will continue to be the same if only because of the lack of time and personnel to do otherwise." Two more favorable projections could also be made. First, the teacher center had taken over the organization of Saturday workshops and the multi-cultural in-service training project from the university and appeared to be better entrenched as middleman between the college of education and local school personnel. To the extent that college of education contacts to the schools ran through the center and school administrators were obliged to use the center as the conduit to the college, the teacher center could lay claim to a strategic gate-keeping funciton. Secondly, the school board meeting and the ensuing restoration of 80% of the funds to be carried by the district led to a perception by some teachers that the center was a secure entity belonging to them.

Changes in personnel were ominous. The local resource colleague was no longer funded and funds for the co-coordinator apparently had been plowed back into operations. This left two half-time staff and the possibility that one of them, the coordinator, would not be there. The on-site consultant estimated, as did other informants, that more help

and a full-time coordinator were needed simply to keep operation at the same level.

Resource levels were down by 20% from the previous year, although there was a slim chance of tapping College of education funds. Beyond that, the continuity of resource provision by the school district was uncertain. The school board chairwoman said:

> Future budgeting is really unpredictable. The economics around us has changed the complexion of school board decisions. Everyone has become more cautious and more conservative...One thing that could happen is that the board would ask the teacher center to work in specific areas and earmark funding for that.

For the most part, the future activity mix was likely to prolong existing formats. The teacher center had refined an apparently successful program comprising one-time and continuous workshops, drop-ins, special activities common to other teacher centers in the network and university projects. In 1980-81, there had been more intensive contact with pre-school teachers. This was an area center staff hoped to expand and one in which they saw possibilities for a greater local impact. Also, attendance from the county schools had increased, which generated support and opened the door to projects tailored to teachers who could not come easily for "sharing evenings" and one-time workshops.

Interorganizational dynamics were hard to predict. The most likely scenario was that the district administrators would get together with Paul Saganne at the college of education to work out a longer-term policy that could keep the center alive while avoiding inter-institutional conflicts. One possibility would be that the college of education take more immediate responsibility for the center, including its budget. A wise course of action here would be that of putting a senior college staff person in charge. Another option would entail releasing a building principal or highly respected teacher to coordinate center activities, while leaving the current governance and budgeting system in place. In both cases, it was likely that the modal patterns of knowledge transfer would persist, favoring between-teacher exchanges and short-term expertise brought to practitioners from college staff. If the university took more initiative in the future, one could expect to see an increase in the number of longer-term collaborations with district schools.

6. SERIALS

6.1. SERIALS AT ARCADIA

Within each of the cases in this study, a subsample of micro-analytic events was chosen as a means of capturing the interorganizational dynamics of the arrangement between schools and colleges of education. These micro-analytic case histories sampled two kinds of events: substantive events, focussed on the execution of a core or typical activity, and institutional events having to do with a key or representative organizational episode. Five serials were investigated at Arcadia, of which four were substantive. Four of the five are presented here in capsule form; space constraints obliged us to sacrifice an account of the "energy education" serial.

6.1.1. The Poets-in-Residence Project Serial

Roots. Lessing first became aware of this program from discussions with teachers in a neighboring school district who had participated in it. The basic structure is simple: a poet would be in residence for approximately one week in a school building, working with pupils on creating and interpreting poetry, then meeting with teachers who had observed these sessions. The teachers with whom Lessing spoke were enthusiastic; they praised the pedagogical skills of the poets, the receptiveness of the pupils and the quality of pupils' writing.

Some months later, Lessing got in the mail a brochure outlining this program and others (e.g., similar projects for music, organized by the state council on the arts. There had been preliminary contacts between Paul Saganne and Peter Handlin, one of the delegates to the state-wide advisory board from the state education office. It was suggested that the teacher centers might want to get involved, so a brochure from the arts council was sent out to coordinators.

The project was discussed over the telephone between Saganne, Lessing and Grace Bush from the Three Rivers Center. It was decided that both Three Rivers and Arcadia would apply for a grant to the arts council. Candidates for poets in residence could be found at North Central University in the English department; they could reach the Arcadia catchment area within an hour's driving time.

Objectives and resources. For Lessing, the project fit well into a growing concern of his and Goff's for more active outreach by the center into the surrounding schools:

and a full-time coordinator were needed simply to keep operation at the same level.

Resource levels were down by 20% from the previous year, although there was a slim chance of tapping college of education funds. Beyond that, the continuity of resource provision by the school district was uncertain. The school board chairwoman said:

> Future budgeting is really unpredictable. The economics around us has changed the complexion of school board decisions. Everyone has become more cautious and more conservative...One thing that could happen is that the board would ask the teacher center to work in specific areas and earmark funding for that.

For the most part, the future activity mix was likely to prolong existing formats. The teacher center had refined an apparently successful program comprising one-time and continuous workshops, drop-ins, special activities common to other teacher centers in the network and university projects. In 1980-81, there had been more intensive contact with pre-school teachers. This was an area center staff hoped to expand and one in which they saw possibilities for a greater local impact. Also, attendance from the county schools had increased, which generated support and opened the door to projects tailored to teachers who could not come easily for "sharing evenings" and one-time workshops.

Interorganizational dynamics were hard to predict. The most likely scenario was that the district administrators would get together with Paul Saganne at the college of education to work out a longer-term policy that could keep the center alive while avoiding inter-institutional conflicts. One possibility would be that the college of education take more immediate responsibility for the center, including its budget. A wise course of action here would be that of putting a senior college staff person in charge. Another option would entail releasing a building principal or highly respected teacher to coordinate center activities, while leaving the current governance and budgeting system in place. In both cases, it was likely that the modal patterns of knowledge transfer would persist, favoring between-teacher exchanges and short-term expertise brought to practitioners from college staff. If the university took more initiative in the future, one could expect to see an increase in the number of longer-term collaborations with district schools.

6. SERIALS

6.1. SERIALS AT ARCADIA

Within each of the cases in this study, a subsample of micro-analytic events was chosen as a means of capturing the interorganizational dynamics of the arrangement between schools and colleges of education. These micro-analytic case histories sampled two kinds of events: substantive events, focussed on the execution of a core or typical activity, and institutional events having to do with a key or representative organizational episode. Five serials were investigated at Arcadia, of which four were substantive. Four of the five are presented here in capsule form; space constraints obliged us to sacrifice an account of the "energy education" serial.

6.1.1. The Poets-in-Residence Project Serial

Roots. Lessing first became aware of this program from discussions with teachers in a neighboring school district who had participated in it. The basic structure is simple: a poet would be in residence for approximately one week in a school building, working with pupils on creating and interpreting poetry, then meeting with teachers who had observed these sessions. The teachers with whom Lessing spoke were enthusiastic; they praised the pedagogical skills of the poets, the receptiveness of the pupils and the quality of pupils' writing.

Some months later, Lessing got in the mail a brochure outlining this program and others (e.g., similar projects for music) organized by the state council on the arts. There had been preliminary contacts between Paul Saganne and Peter Handlin, one of the delegates to the state-wide advisory board from the state education office. It was suggested that the teacher centers might want to get involved, so a brochure from the arts council was sent out to coordinators.

The project was discussed over the telephone between Saganne, Lessing and Grace Bush from the Three Rivers Center. It was decided that both Three Rivers and Arcadia would apply for a grant to the arts council. Candidates for poets in residence could be found at North Central University in the English department; they could reach the Arcadia catchment area within an hour's driving time.

Objectives and resources. For Lessing, the project fit well into a growing concern of his and Goff's for more active outreach by the center into the surrounding schools:

> Lessing: we both thought that a college just can't exist on campus. It has to get out into the schools if it's going to make any difference.

The program focus also dovetailed with the tenets of the Experimental Program. For example, poets were to work directly in schools, opening the boundaries separating schools from the surrounding community. There was an emphasis placed on creative expression; meter, rhyme, structure and grammar came second to more spontaneous and free-form poetry on topics meaningful to pupils. The socio-emotional side of school life was getting much-needed attention through such a program. Poetry was a good vehicle for integrating curricula, for instance, writing poems about the natural or the physical universe. All these were themes of the Experimental Program. Finally, there was a latent objective of changing the ways poetry was taught in the schools by showing teachers how their own pupils could respond to an alternative way of appreciating and writing poetry.

There was a problem with funding. The arts council would put up $3,500 to defray some of the costs (honoraria, materials, transportation) but required that local organizers contribute $1,000 each along with in-kind services (secretarial help, printing the poems produced by pupils). Saganne made the coordinators attentive to the small fund in the Gibb Foundation grant for special projects. In the fall of 1979, Lessing and Bush wrote a proposal for their respective teacher centers, asking for $1,000 each.

When the state-wide policy board met in the fall, these requests were considered along with others. It turned out that the special fund did not have enough money to cover all requests. Some were put off to the following year; others were reconfigured. In that process, the proposal from Savil was increased and the proposals from Three Rivers and Arcadia cut to $800 each. There were immediate objections. It was said that the delegates from Savil, being more experienced in the workings of the policy board for having served two consecutive terms, had manipulated the voting in favor of their center. As discussed earlier, this was the first serious conflict within the state-wide teacher center network, and a harbinger of future problems in the equitable distribution of resources among the various teacher centers.

At Arcadia, Robert Goff quickly came up with the missing $200, as did the policy board at Three Rivers. Three instructors were hired from North Central University, all close associates of Grace Bush. Delegates from local schools to the Arcadia center used their time slot in the bi-monthly faculty meetings to describe the program and take volunteers. Available places were quickly filled.

Program execution, barriers and facilitators. The program went smoothly. The three poets fanned out for three weeks in April and May, working for one day in each classroom. The class talked about poetry, then wrote some, using a non-verse, free-form format, and discussed what individual pupils had written. The participating teachers observed the activities, took notes, then met with the poets during breaks and after school.

From all accounts, pupils were attentive, productive and delighted with their poems (results at Three Rivers were analogous). There were some minor problems. One class was initially disruptive, but calmed down. Some teachers used the time to grade papers rather than to observe. In some schools, physical education, one of the children's favorite periods, had to be rescheduled so that, in effect, poetry was replacing physical education.

Aside from preparing an anthology of poems written during the project, the role of the teacher center was primarily organizational. But Lessing appeared to have followed the program closely:

> I called each of the schools every day to see how it was going...I called the poets at the end of each week. And I kept in touch with superintendents and principals.

This mode of preventative monitoring probably contributed to the smoothness of program execution. Another facilitating factor was the pedagogical skill of the poets themselves, who were comfortable in schools and could, for the most part, deal with group instruction.

Outcomes. Four of the teachers who had volunteered for the program were interviewed, as was one of the poets. We also read the anthologies and perused newspapers clippings and reports. Testimony was universally positive. Starting with pupil-directed outcomes, here are some excerpts from interviews:

> Those children really came alive. They got involved, even the ones who had been pretty negative about poetry before that.

> He really got through to the children. They came out and wrote some beautiful things.... I thought some of the formats were pretty mechanical, but the children wrote real well. They even picked up on poems I thought would have been too complicated for them. I was really surprised because this group hasn't been too creative.

Two other informants said that since the project(interviews took place about three weeks thereafter) pupils had improved the quality and production of prose writing. "They write more and they agonize less over the choice of words." Pupils also apparently "wrote more about their own emotions," brought in poems they had come upon in books and magazines and listened more responsively to other pupils engaged in reading their poems. Such gains were unlikely to hold over time, but their short-term effects were dramatic.

Effects were also strong at the classroom teacher level, suggesting that instructional practices had changed. Two informants said that they had learned how poetry could be used to elicit emotions; all reported that they were already using many of the techniques modeled by the poets. Two said that they paid more attention to their own writing and read more poetry. The poet who was interviewed said teachers had told him they were spending less time correcting errors and more praising instances of good writing. One teacher claimed farther-reaching effects:

> Since he (the poet) came, I feel like I've been working more in depth. I've thrown away some ideas I used to have about writing poetry, like pre-set rhyming... Poetry is a hard subject to teach in seventh grade; he taught me a lot about how to do it.

This was a leitmotif. Teachers had felt unsure about teaching poetry and either shied away from it or used conventional format. In other words, poetry had been an area of weakness. Overall, teachers enjoyed the project and felt they had benefitted. A citation from a local news clipping about the program summed up informant's accounts well:

> It taught me a lot about teaching poetry. It was one of the highlights of my year.

Further developments, future expectations. Lessing said that teachers had been enthusiastic; they and others wanted the program to run the following year. There had been letters of congratulation and support from parents, which was unusual. But funding from the arts

council was lower for 1981, such that the program would be continued but on a smaller scale. Other spin-off projects were planned, such as an in-service program for art, dance and music sponsored by the State education office and the chautauqua.It is not clear why Lessing made no effort to raise additional funds either at the college or from school administrators to keep the project at the same level. It may be the case - and there are indications to support such conjecture - that activities in this area were expanded more slowly than in areas where Lessing had expertise, e.g., science, social studies and math.

Analysis. The poets-in-residence serial illustrates many of the workings within the state-wide network and the Arcadia Center that were examined earlier. The most economical way of highlighting these factors is to list them. First, for the statewide teacher center network as a whole, this serial exemplifies nicely

- the "hidden hand" of Paul Saganne as a behind-the-scenes facilitator of new projects and prospector of external funds;
- the SEA "connection," whereby delegates from the state office to the network gradually became delegates to the state office from the network and helped to uncover opportunities for funding and experimentation;
- the influence of the Experimental Program in the choice of projects and in the emphasis on accelerating classroom change;
- the looming institutional conflict among delegates to the network's policy board over the distribution of increasingly scarce resources among the nine centers;
- the multiple possibilities of linking universities with area schools by creating an intermediary unit which matches user interests with available resources and arranges for those interactions.

For the Arcadia Teacher Center, this case history points up several of the variables identified in the causal network (see section 7) as important determinants of outcomes. Using those variable labels and numbers, the following list is germane:

- Coordinator ideology (6), as shown in the emphasis on accelerating practice change in the direction of the Experimental Program philosophy;
- (Low) access to alternative knowledge resources (14), on the part of area teachers, who were hungry for knowledge inputs, especially inputs that could be delivered to rural schools;

• Coordinator energy (19), which is the nearest but not the best approximation for the close monitoring of the project by Lessing;

• Increased capacity (50) on the part of teachers as a result of the program,notably in areas of weakness or uncertainty;

• University support (32), illustrated here in the form of financial backstopping by Robert Goff, who provided the necessary funds. Lessing said, "Robert took care of all the money questions on this one, too;"

• Teacher support (28), as shown in the active role of the delegates from the center policy board and the setting aside of time during staff meetings specifically for matters relating to the teacher center; and

• Variety of activities (17). Here, as elsewhere, one successful project gives way to several others in the same general domain. The "poets" project led to the "art, music and dance" project. then to the chautauqua.

6.1.2. The Micro-computer Serial

We were interested in tracing one serial connected to the one-week summer workshop program during which teachers formulated an individual project, met with center staff to design an implementation plan, checked out enabling materials, presumably followed through in their classrooms and sent back samples of pupils' work to obtain the second two credits allotted for participation in the workshop. The micro-computer serial was also interesting because the teacher in question had not found the requisite expertise or materials in the teacher center and was channeled to another department. This provided a chance to look at intra-university linkage.

Roots. The individual project format was introduced in the summer of 1979 and proved successful. Some teachers had trouble with stimulus overload at the center; there were too many attractive materials and too great a temptation to stockpile ideas and resouces at random. By focussing on one project, teachers could concentrate their energies and improve chances for successful follow-through in their classrooms. Another objective was that of familiarizing teachers with a more disciplined strategy of specifying objectives, then articulating the resources needed to meet the objective and the criteria by which outcomes could be judged.

Jan Parris taught high school math approximately 100 miles from Arcadia (she was interviewed by telephone). She first heard about the summer workshop from a flyer sent to her school, which was not formally a member of the Arcadia network. Her initial motivations were hazy:

> I was just looking to pick up courses (for contract recertification)... I liked the idea of a one-week workshop in the summer... I knew you could teach math using micro-computers, and there was one at my school.

Program execution, barriers and facilitators. Parris said she had had no previous experience with computers. She had trouble designing a preliminary plan. Also, the teacher center had very little appropriate material:

> They just had a little bit; there was only a tiny section of computers. Most of that was for the elementary grades.

She then conferred with Lessing, who sent her to a colleague in the mathematics department, Homer Baneston. Baneston was at a loss:

> She didn't have any experience at all with computers. It was hard to know how to advise her. I showed her a few textbooks that she said she'd order. Then I sent her to Prof. Handley.

Handley "made me aware of the gaps in my training." He suggested she enroll in his four-week summer course which was difficult for her to do with family responsibilities at a home 100 miles away. They agreed on a special arrangement whereby she would come for one full day each week for a month.

After sitting in on a few of Handley's sessions, she formulated a plan at the teacher center, based on "what I wanted to do when I knew a lot more about computers":

> But I did draw up a plan to use the Radio-Shack computer at my school to teach math. And I asked them to order some materials they would send to me, which they sent on a few weeks later.

She completed Handley's course successfully, and remained in intermittent contact with him (borrowing books). She had no further communication with Baneston, nor with the center, apart from sending in her completed project and receiving notification of her two credits.

Outcomes are less interesting here than further developments (see below). Parris said that she had carried through on her summer project, with some difficulty. The obligation to evaluate the project and submit samples of pupils' work was a salutary stimulus; she might not otherwise have followed through. She taught math and elementary programming to six classes and felt that her mastery was shaky, but expected to improve considerably the following year.

Immediate outcomes at the teacher center were trivial. Parris was one of 25 workshop participants and had apparently got what she wanted. Her area of focus did signal to the center that more materials were needed on micro-processors, notably at the secondary level. These, including those requested by Parris, were bought. Lessing was not aware that Parris had been simply re-oriented by Baneston nor that she had enrolled in an introductory course in the math department. His reaction on learning this was: "The important thing is that she got to the resources she needed."

Further developments, future expectations illustrate well the expansion of activities within the teacher center, together with the increase in exchanges between teacher center staff and members of other departments at the college. However, we begin with Jan Parris, who said she planned to enroll in a workshop on math activity centers ("that students can use while others are working with the micro-computer") during the next summer session. Aside from this workshop at the teacher center, she had signed up for a mathematics course and a computer course (by correspondence) at North Central University - both for continuing contract credits.

Follow-up within the mathematics department at Arcadia State was extensive. Apparently, Jan Parris had been a catalyst. Baneston said,

> I thought to myself, we'll just have to get some more materials so we can help those people. I wrote to several companies and got a whole stock of software and workbooks on using and programming micro-computers. Most of it is self-instructional...The next person who wanders in and asks for help is going to find some sophisticated equipment here.

He also went to Goff and planned the workshop for the 1981 summer program at the teacher center on use and programming of micro-computers. The arrangement was that a math instructor would teach the workshop through the education department at the center. "It won't scare them that way, like it would if we ran it through the math department."

Baneston then worked with Goff and Lessing on setting up a terminal in the center from which math courses could be taught and pre-service students could work with area teachers who brought their pupils in for the two-week sessions. It was then decided to expand the software base to offer training and services to area farmers for accounting and record-keeping. These projects are now underway.

Analysis. This serial also illustrates several of the core variables displayed on the causal network:

- Contract requirements (14a), perceived benefits to teachers (16) are shown here in the impetus for teachers to enroll in in-service programs and the benefits preceived in using the teacher center where credits are accorded for practice-usable workshops;
- University service centrality(5), as reflected in the special arrangements made for Parris by Handley, the course instructor, and in Baneston's follow up in the math department;
- Intra-university linkage (43) was facilitated by the fact that many staff members in other departments were former teachers and taught to future teachers in their coursework. The serial shows nicely how links between the teacher center and other departments were forged;
- The center's craft-usable resource base (18) was caught napping here, with a dearth of materials for secondary-level users - a problem discussed earlier. The serial shows how these gaps are filled (a) by orders on the part of users and (b) by links to specialists in other departments;
- Gains in teacher capacity (50) through inputs provided either by or via the center;
- Diversity of objectives (22), as illustrated in the branching out from a summer workshop to the incorporation of the micro-processor in the pre-service program, then to a project to plug non-educators into center resources by attending to needs of area farmers;

• Extent of use (24) by area teachers, who tended to return to the center once they had used one of its services; and

• Inter-university competitiveness, (23) reflected in the fact that Parris could draw not only from summer programs at Arcadia but also at North Central University in Three Rivers, and could also get credits through the extension program at North Central.

Finally, the serial provides a glimpse of the relative isolation of secondary-level teachers working in rural schools,often as the sole teacher of their subject matter in the building. Clearly, the center's emerging policy of more aggressive outreach directly in area schools was aimed at addressing this problem. As a general trend, the center appeared to service best the schools in immediately surrounding areas, then those in more remote communities, if only because proximity allowed teachers to come in more often.

6.1.3. The New Room Serial

This is a case history of an institutional episode, the extension of the teacher center into space adjoining its present facilities. As it turned out, the story was a brief one; its structure is best captured as a problem-solving cycle.

Awareness of need. The main resource room at the center was beginning to get overcrowded, yet Lessing had in mind the extension of display areas and classrooms. The energy education project, initiated by Saganne at North Central University and channeled through the teacher center network, had begun with a summer workshop. Lessing now planned to extend it by ordering and displaying more materials. Also, the present arrangements only allowed for one class to be taught at a time without breaking the concentration either of students or of teachers dropping in to consult and borrow materials. Lessing and Goff were also looking for ways to encourage staff from other departments to use the facilities of the center.

Diagnosis and search for resources. Lessing, consulting with Goff, concluded that he needed several rooms or one large space that could be subdivided. The most likely candidate was a large (40' by 20') room in the basement of the old main building that adjoined the center through a corridor leading to the newer buildings. The room was not being used, other than as an informal lounge for coffee for college staff who had other, more comfortable lounges available to them on campus. It would increase available space by about 40%.

Development, implementation of a solution. Goff made some calls. He found out that no department or administrative unit was using the space and none had designs on it. He and Lessing then wrote a short proposal, including a layout of the rooms and their proposed use, a justification for the extension and an estimation of costs for wiring, lighting and refurbishing ($200, the remainder to be done by Lessing, his staff and work-study students). Goff met a week later first with the president, then with the business manager. Work on the area began a few weeks later, and was completed in time for the fall semester of 1980.

In the proposal and during face-to-face meetings with college administrators, Goff and Lessing argued for the new space on the following grounds:

- the space was under-utilized,
- only one workshop could be carried on at a time in the present facilities,
- more display room for the center was sorely needed,
- the funds required were small,
- other departments would teach out of these facilities.

There was very likely also some tacit bargaining going on. The college administration was aware that the center had become a drawing card for recruitment and had helped to bring in revenues through special programs and contract recertification. It was also aware that the psychology and education department had pursued aggressively and successfully an extension program throughout the region and, more recently, throughout the state in collaboration with the state education agency. None of this appears to have been discussed at these meetings, but was taken for granted by both sides and probably facilitated approval of the request. As Goff put it, more diplomatically:

> It's easier to get support elsewhere in the college for new monies or more space now that the center is seen as an important part of the college. It's been established.

Outcomes. Three separate areas were created: A large central area contained displays in energy education and a section for art exhibits and space for a seminar or meeting for 30 people. Two smaller rooms were partitioned off the main area, one for materials and classwork in special education, the other for physical education.

The art professor was soon to move her office into the center and to teach out of the larger ara. Staff from special education and physical education would teach out of the smaller rooms.

In addition, community groups Alcoholics Anonymous, Weight Watchers) were scheduled to use the larger area for evening meetings.

At the same time as this extension and remodelling were going on, center staff had also decided to convert two supply rooms on the first floor to display areas and small-group meeting rooms for nature studies and energy education. The rooms were outfitted with indirect lighting, rugs and wall decorations, all scrounged from the college and the town.

Analysis. This serial illuminates another set of core variables shown on the causal network, namely those focussing on teacher center-state college relationships. Below is a candidate list:

- Institutional priority of the center for the college (37), as illustrated by the facility of approval;
- (Small) scale of the site (4), making such negotiations rapid and uncomplicated;
- Status of the center in the college (47);
- Visibility, prominence of the center (30);
- Resource commitment by the college (48);
- Energy of the coordinator (19), as illustrated here in the rapidity of the rate of expansion, the extension of other rooms at the same time and the mobilization of volunteers to do the necessary work;
- Clout of IOA leader (31), which in this instance refers both to Lessing and Goff, perhaps more so to Goff;
- University support (32);
- Variety of activities (17), as shown in the diversity of functions (display and exhibit areas, small seminar rooms, larger classrooms) and the extension of the current program (expanding energy education, introducing art activities);
- Diversity of objectives (22), shown by the co-optation of other departments (art, special education, physical education) and the out-reach to the surrounding community;
- Intra-university linkage (43), embodied clearly here in the new connections made between other departments and the center; and

• Institutionalization (52) as the center was perceived as "established" and could lay claim to stable resources within the college.

6.2.4. The Nature Studies Serial

This was perhaps the most ambitious episode in the life of the teacher center during the period studied. It is a good cameo of the multiplicative effects at Arcadia of one activity in generating others. We chose this serial initially because it involved cross-department collaboration and targeted the surrounding community. As it turned out, these were secondary features. We also wanted to test the emerging hypothesis that more knowledge would be generated, transferred and used when linking agents had strong expertise and interest in that particular area. That proved to be the case here and when the nature study serial was compared to other serials (e.g., the poets in residence) or to the degree of program development elsewhere (e.g., in computational math, in grammar and composition, in psychological or institutional topics, in many secondary-level subject matters).

Roots. In 1976, some 14 acres of undeveloped land just west of the town center was donated to the local parks commission. The commission consulted with a local resident, Alan Janeway, a faculty member in biology at Arcadia State. Janeway counseled the commission to leave the area as it was, with its natural vegetation and animal life (otters and beavers). This was easy enough to do since the commission had no plans for use of the area nor any funds for upkeep.

Early in 1978, the commission received a letter from the Youth Conservation Corps, asking for proposals in education or conservational activities that the YCC could fund. One member of the commission, a fifth grade teacher in the town, came up with the idea of teachers bringing their classes to the area for observations, plant and leaf collection, the study of rocks and soil and possibly some small experiments. The commission discussed the idea, approved it and nominated the commission president, Dr. Janeway, and Beth Lessing to draft the proposal. Beth Lessing was Don Lessing's wife; it was she who had generated the concept.

The proposal called for the Youth Conservation Corps to clear the area, lay down some trails and draw up some formats for

nature study by school-age children and their teachers. The proposal was submitted in September of 1978 and approved the following spring. A high school biology teacher, Steve Migros, was hired as project director for the summer program. The YCC workers accomplished all the requisite tasks. Migros integrated some components of the brochure he had elaborated during the summer into his biology curriculum. In the fall of 1979, he began bringing his students to the area.

Objectives and resources. Lessing began to reflect on this project during the summer of 1979, having followed its progress through his wife and through Migros, a personal friend and the husband of a professor in the art department with whom Lessing collaborated. He came up with a concept similar to the one used for the one-day and two-week visits wherein teachers brought in their classes to observe hands-on work by pre-service interns using new techniques and materials. In this instance, teachers would bring their classes directly to the nature area and interns would take charge of observations, experiments and projects carried out by pupils.

The parks commission still had no money for maintenance of the area after the summer project. Lessing proposed that the teacher center take over responsibility for maintenance and educational use. He found $1,000 in the center budget to cover these costs. More accurately, "I asked Robert (Goff) if we could do it; he found the money in our budget."

He then looked around for help in designing the area for instructional use. Through the grapevine of Experimental Program graduates, he located a school principal in a neighboring state, who came to Arcadia "with boxes and boxes of materials." Here the concept evolved of setting up 11 "learning stations" along the trail with different observations, exercises and experiments. The interns would move from one station to the next with small groups of pupils, lecturing to them, directing observations of animal and bird life, having children write about and draw trees or plants and overseeing the collection of samples of plants and leaves.

Finally, Lessing, the interns and work-study students took charge themselves of maintenance of the area.

Program execution, barriers and facilitators. At the start of the 1979 fall quarter, the teacher center produced a brochure about the area and a booklet of activities for visitors. The class visits were described in the newsletter, which went out on a Monday. By Wednesday,

the fall quarter was booked. Apparently, teachers liked the idea of outdoor instruction with the possibility of following up in the classroom.

Some 15 teachers and 300 pupils came to the nature studies area that fall. For Lessing, the operation was "smooth and successful. There weren't any major problems." However, there were some features needing correction. The dean of the college wanted a syllabus for submission and approval before this activity could be written into the third-year intern program. Some rapid guidelines were written by Lessing and submitted (successfully) by Goff. Lessing said, "We didn't want to give details; we wanted to keep it flexible." Another problem: the interns, who were to plan in advance a series of observations and experiments, came under-prepared to the area. Also, few of the teachers followed up on the visit in their classes. Some simply "dropped off their pupils at the nature study area and went elsewhere." Lessing conjectured here that teachers needed more systematic help in follow-up exercises. The great number of learning stations (11) made visits rushed and often superficial.

The visits continued in the spring, but several changes were made progressively. The number of learning stations was reduced to four. Interns prepared for the visits by preparing a single activity, which involved fairly extensive research and preparation of materials. A more elaborate brochure containing preparatory and follow-up ideas for area teachers was written and distributed. There was spade-work on a self-guiding tour for teachers and area residents.

Other features were added. Lessing got the idea of using the area and its trails during the winter for cross-country skiing. The center, with financial aid from the physical education department and R. Goff, bought 20 pairs of skis and rented them out. Three canoes were bought and a canoe trip integrated into the visits to the area.

There were further spin-off products. Lessing scheduled a workshop on nature studies in the summer workshop program for 1980, and tried to prepare activities through the 8th grade level in order to reach secondary school teachers. The format for the workshop was similar to his coursework. It derived in large part from the Experimental Program. Participants did the same things which pupils would

be doing; observations, experiments, collections and project work calling for the integration of basic skills with small area studies. For instance, a unit on insects would involve observation and drawings of a spider spinning a web, taking samples of vacated webs and researching, then writing up one aspect of a spider's life cycle. As for the other workshops, participants received full credit after they had carried out and documented the project in their classrooms.

Finally, in the fall, two of the new rooms were set up for research and seminar work on nature studies. Lessing ordered more materials and erected displays.

Outcomes. In the initial 18 months, 86 teachers and 450 pupils were brought through the nature studies area. Interviews with four users yielded data analogous to the results reported in the poets-in-residence program. Teachers said that children were "really turned on" by the visit, that pupils began bringing in pictures and samples of plant life for class discussion, that otherwise abstract areas, such as ecology, were now discussed with more interest and thoroughness. Far more in-class work on nature studies was done. In several instances, teachers brought their classes to similar areas near the school for follow-up activities. All informants reported that science had been one of their weakest areas and that they had jumped at the opportunity to observe the interns at work, to collect materials and to receive a more elaborate brochure with ideas for preparing and following up on the visit.

Community groups - a teachers' association, cub scouts, retired persons - used the area more extensively in the second year. There were more requests from area teachers than time slots. Lessing saw this as indicating "there's a real need here; it's still untapped."

Further developments, future expectations. The workshop would be continued in 1981. Lessing had already collected an impressive bulk of materials for that workshop and for the resource bank. Many were in the form of kits and learning packets calling for the specification of objectives, then offering alternative activities, many of them involving the integration of science with poetry or music and art.

Lessing had also got together with Goff and Alan Janeway in the science department to write a grant proposal to the U.S. Office of Education in order to further develop the area. The basic concept consisted of teachers within a 100-mile radius attending a week-long workshop in nature studies, then carrying out an individual project in their home schools. Regional conferences would allow teachers in the same part of the region to exchange materials and experiences. There was also a provision for the project staff to circulate among participating schools in order to help with follow-up activities. Finally, the project would yield an extensive self-guiding tour for area teachers. Funding ($42,000 was requested) went chiefly for staff salaries and for the purchase of materials (e.g., units and learning stations) and equipment (e.g., benches). There was a somewhat pro forma design for evaluating the program. At last word, Goff had heard that the project would be funded but at a slightly lower level.

There was more. Lessing and Janeway had also got together on a project to set up segments of the nature studies area for growing native prairie grasses, which had virtually become extinct in the area. Here as well, spinoff activities were planned. It is important to remember that all these developments occurred over a 18-month period.

Analysis. As in the other substantive serials, there was a synergistic effect from the marriage of enterpreneurship, ingenuity, easy linkage with sources of expertise and support and a good sense of the educational "market" in terms of teacher needs. The project simply kept expanding and, in so doing, reached out to a wider public and consolidated institutional support systems while at the same time debugging and differentiating the activity itself. These patterns are shown and traced out to the set of outcomes to which they contribute on the causal network for Arcadia (see section 7). The most pertinent variables in the network that are illustrated in this serial include the following:

- Coordinator ideology (6), as reflected in the Experimental Program approach to nature studies and in-service teacher training;
- Perceived benefits to teachers (16) and increased capacity (50) as a result of tutoring in subject-matter areas in which teachers felt weak or insecure;

Scale of site (4) and number of informal links between schools and the college (8), as illustrated in the informal webs linking Lessing and his wife with Andrea and Steven Migros and both with Janeway and the parks commission;

- University localism (12) as shown by the interest of college staff to operate in and develop the local area;
- Energy of the coordinator, illustrated nicely here in the proliferation of spin-off products and the drive to turn the area into a knowledge resource base;
- Number of long-term collaborations between schools and the college, which is shown here in the process by which visits to the nature area grow to encompass preparatory activities and follow-up exercises;
- Variety of activities (17), moving from the learning stations to the ski and canoe trails, then to the summer workshop and prairie grasses;
- Diversity of objectives (22), shown here in the exploitation of the area for pre-service and in-service education, for the community, then for purposes of outreach to schools lying beyond the eight participating districts;
- University support (32), reflected here again in the form of financial and administrative aid given by Goff, the department chairman;
- Intra-university linkage (43), through the collaboration between Janeway, Goff and Lessing;
- Extent of use of the center, reflected in the sharp demand for time slots at the nature studies area; and
- Career-relevant incentives (13) of the coordinator, who embarks on an enterprise which can help practitioners directly in the classroom, builds up the resources and servicing capacity of the teacher center and focusses on an area in which he has interest and expertise.

6.2. SERIALS AT THREE RIVERS

Five episodes were chosen at Three Rivers. Three of these micro-analytic case studies were substantive: a micro-computer project, the creation of activity centers and an energy education project. Two others were organizational: the one-day shut-down during which staff analyzed the center's operations and the school board meeting at which the recommendation to cut funding for the center was overturned. We report below on three of these serials.

6.2.1. The School Board Meeting Serial

Roots. Each year the president of the teacher center policy board went before the school board to report on the teacher center. This was a moment to assess progress and lay out plans for the future. There was also a financial accounting, including projections for the following year. The board meeting in June, 1980, was expected to go smoothly for the center, especially since the year had been a successful one. There was one possible obstacle: the district was to increase its share of funding for the teacher center by $7,000 moving roughly from 40% to 60% coverage of the full budget. A few weeks prior to the meeting, the policy board president, Lois Nelson, contacted the assistant superintendent, Peter Blake, who oversaw the center at the district office to see whether any particular preparation was called for. She was told there wasn't. Blake even volunteered to present the report for the center.

Blake was also a delegate to the policy board. He came to the meeting of the board ten days before the school board meeting with the school district's proposed budget for the following year. As policy board members perused the budget, some one noticed that the teacher center was missing. Blake said that on the recommendation of the school board to cut the budget by at least $30,000, the school district had recommended the elimination of funding for the teacher center. The chief reason given was that the center did not cater directly to school-age children nor service the full set of teachers in the district. If cuts had to be made, this was a legitimate criterion to apply.

Policy board members were "shocked and dismayed," as much by the way the recommendation had been made,i.e.,without prior consultation nor even prior warning,as by the recommendation itself. One board member remarked that if no one had noticed the absence of the center on the school district budget, the issue would have been settled at the school board meeting with no opportunity to plead the center's case. Within the district there had already been growing tension between the school district and school board on one side and the teachers' association on the other over contract renewals. The incident over the teacher center may have further poisoned the climate.

Preparation of the meeting. Lois Nelson contacted the superintendent, Hal Jensen, who told her that the recommendation could be appealed at the school board meeting. The policy board then made several contingency plans. A speech was drafted, with statistics to buttress the center's case. The board then contacted Paul Saganne to request that he make a short speech at the school board meeting. Saganne accepted. He, Brenda Buckley and other college of education staff then began to call school board members whom they knew personally to lobby for the center. Other policy board members did the same. Notices were sent around to local schools to mobilize the largest possible turnout of district teachers at the meeting. Some teachers declined, claiming that the teacher center was essentially an organ of the local teachers' association and should be defended by its officers.

Prior to the meeting, at least three rumors circulated, each having a knowledgeable constituency. Some said that the school board "had never been thrilled about the center." It was rumored that the board had let the superintendent know that the teacher center was "really more of an open house than a serious institution" and would be a good candidate for the budget cuts requested. A second group thought that the district administration had never supported the center, but had gone along with the project as long as other, more valued expenses were not drained by funds allocated to the center. The moment had come when other projects would have to be cut back to cover the budget increase to the teacher center. Finally, some were certain that the superintendent had engineered the crisis in order to show the school board how strong teacher support of the teacher

center really was. The school board meeting would be the opportunity to put aside all doubts about the depth of commitment on the part of teachers. Either teachers would come en masse and oblige the school board to overturn the superintendent's recommendation, or there would be little reaction and the center would be deleted justifiably from the budget. As unlikely as this third scenario appeared to observers, it had some well-informed advocates, notably Paul Saganne, the dean of the college of education.

The school board meeting. About 40 teachers came, which was considered a strong turnout. They refused to accept the argument of some school board members that other basic services would have to be cut if the center were to be refunded with a $7,000 increase. It was suggested that there was plenty of administrative fat to be trimmed.

Speeches were made in favor of the teacher center by Saganne and Bill Bedford, the other assistant superintendent at the district office. Bedford said he had been impressed with the center this year, and that he had not always felt that way. He pleaded in favor of the increased budget. His argument was that the district had been the victim of instructions by the school board to make budget cuts when it was obvious that some of these cuts would of necessity strike valid projects such as the teacher center.

The board voted - narrowly - to restore the original budget and half of the projected increase. This left the teacher center some $3,500 short for 1980-81, but well ahead of the full cuts recommended. Instead of the center, funds for curriculum development were reduced. Informants interviewed about the vote, including the school board chairwoman, gave three reasons for approval: the number of teachers who turned up ("that really intimidated the school board"), the suspicion that policy board members and college of education staff had softened opposition with an effective lobbying campaign and, finally, the reputation of the teachers who spoke in favor of the center. To cite the school board president:

> It wasn't the number as much as who came. They were highly respected teachers and just seeing them there supporting the teacher center was probably the chief thing that turned the board around.

Outcomes and further developments. As mentioned in earlier sections, the budget cuts forced the center to cut staff costs by reducing the calendar of activities to seven months. There was hope that the full budget would be reinstated the following year. At the least, there was consensus that the school board had committed itself to the center for the coming two to three years, barring an unfavorable yearly review. The teachers' association was pleased to see that a strong turnout could overturn an administrative recommendation. It was also felt that this crisis had consolidated the commitment of area teachers to the center.

Analysis. The school board meeting serial illustrates several of the leitmotifs underlying the Three Rivers teacher center. Taking the core set of variables in the causal network (section 7.2) which covers most of these themes, the following variables are pertinent here:

- No. of informal links (1), well-illustrated here in the apparently successful lobbying effort conducted by Brenda Buckley and Paul Saganne;
- (Low) harmony of teacher-administrator relations (10) as shown in the confrontational mode in which this episode was played out;
- Teacher support (25), well-documented here in the turnout at the school meeting, the reputation of teachers speaking in favor of the center and the general perception that this incident had further consolidated commitment to the teacher center;
- University support (19) and institutional priority of IOA membership for the university (12), as shown by the mobilization of college of education staff;
- (Low/mod.) institutional priority of IOA membership to school district (13), as seen in the superintendents' recommendation (although alternative interpretations are plausible here);
- (Low) internal funds (42), well captured here in the school board's request for lower school district budgets.

6.2.2. The Micro-computer Serial

This episode is important in several respects. First, it appears to have been the single most successful project at the Three Rivers center. Next, it is a good illustration of knowledge transfer from the college of education via the teacher center to local schools. Third, the serial shows how loosely coupled were the college of

education and the teacher center, so that informal ties carried the full weight of inter-institutional exchanges. Finally, this episode points up the positive back-effects on university staff resulting from their collaboration with the teacher center.

Roots. Sam Carr , a professor of mathematics education in the elementary education department of the college of education, had bought a (PET) micro-computer in June, 1978, in connection with a course on computer programming for elementary-level mathematics teachers that he had been teaching for two years. In the fall he began taking the computer into schools for work with children. He had an informal research interest in determining the age at which children could operate the programs, and had begun to do intensive work with one kindergartener, teaching him to program the computer.

Carr's wife, Sally, was the local resource colleague for the Three Rivers Teacher Center. She followed his work with interest and mentioned it at a policy board meeting, suggesting that the computer might be used through the teacher center to reach teachers in local schools. There was a small sum of Gibb Foundation money available for purchasing materials; it was suggested that the PET computer might be a worthwhile purchase. Carr first demonstrated the computer for Grace Bush, then took it to the next policy board meeting. The center decided to buy its own computer and asked Carr to give a one-time workshop for area teachers.

Program execution, barriers and facilitators. Carr gave his presentation, then made copies of available programs on cassette tapes. He also wrote up a set of directions and taped them to the computer. Staff at the center set up a lending list for sign-out of the machine by teachers on a one-week basis. In the 1978-79 school year, the computer was seldom checked out.

However, by the following school year the machine was signed out continuously. An estimated 500 pupils used it that year. In 1980-81, the center bought a second one to keep up with the demand. Informal feedback was very positive. Teachers reported that pupils loved the computer and had in most cases shown dramatic gains in motivation, time on task, even in levels of achievement. Teachers also enjoyed working with the machine, but used it with some uncertainty. To counter that problem, Carr offered a workshop on programming through the teacher center. Unfortunately, most enrollees were secondary-level teachers, whereas the greatest number of users were

primary-level teachers.

Outcomes. Institutionally, the project had two discernible effects. The Three Rivers school administration, which had been toying with the idea of buying a micro-processor for district schools, decided to go ahead, in part as a result of the teacher center's success, although another model (APPLE) was ordered for each of the district's 16 schools, along with a monitor and disc drive. Also, at least one other teacher center picked up on the idea.

Testimony from two informants went along with the general enthusiasm reported by teacher center staff. A junior high school teacher said that his pupils in math and social studies were more motivated, made fewer errors and stayed longer on task as a result of the machine. The computer also saved him work; he no longer had to make up and run off worksheets or correct papers and give grades, since the machine took over those functions, provided it was properly programmed. He found out as well that class drills and exercises could be handled using a TV monitor. Pupils were attentive and covered about three times the material that would have been done in the same time frame with teacher-led drills.

This informant claimed that the mini-computer had transformed his teaching, increased the amount of work that got done and left him more time to do individualized remedial work. He also said that he had now developed a professional interest in computer programming for 7th - 8th grade instruction in math and social sciences. He was now teaching some of his students to program with computer and had begun to use the machine for logical reasoning exercises, for spelling and for more advanced math. Finally, he had become the school consultant for use of the PET computer and had begun to write programs in other subject matter areas. He felt that more intra-building linkage had grown out of this project:

> For instance, the school's reading specialist, the 8th grade language arts teacher and I got together to do some programs that would help with those skills. It made for some real teamwork.

There had not been as many far-reaching outcomes for the second user who was interviewed, but many of the same effects were reported: more time on task, less disruption, positive reinforcement leading to better performance, instant error correction. This was a special

education teacher who claimed that the computer was ideal for her population of pupils who were easily distracted or dispirited. Whereas pupils typically stayed on task four to five minutes, they were now attentive and productive for 20 minutes. She also said that the computer had engendered more peer assistance among classmates and had led to a more individualized mode of classroom management.

Both informants viewed their experience as representative of colleagues at their respective schools who had used the computer. They also said that as a result of the computer project, they and others at their schools had become more active users of the teacher center, both for drop in evenings and for workshops.

Finally, Sam Carr felt that the project had affected his research and teaching. By working in classrooms in which the computer was being used, he was able to work more intensively on children's mathematical reasoning and computational skills and to translate these data into course work that was far better informed for reaching a pre-service student public.

Further developments, future expectations. For teacher center staff, the project appeared to have yielded as many fruits as were possible. By buying a second computer and scheduling another workshop on programming for elementary teachers, the center had provided for expansion and greater teacher mastery. The center was also shopping for higher quality software that could be made available to users.

Analysis. Here again, several of the variables that figure on the causal network are well illustrated in this serial. To mention the most pertinent:

- No. of informal links (1), shown well in the trace that leads from Sam Carr through his wife to Grace Bush. Were that link between Carr and Bush not established, it is unlikely that the project would have emerged. Carr estimated that:

> there's not much attachment between the center and the college. The ties are pretty minimal; they run along lines of friendship or family.

- School-university linkages (44) were increased by means of projects such as this one, which brought a college of education staff member more intensively into local schools.

• Variety of activities (26), of which this episode is a good illustration in that the project is different from but complements the one-time workshops and special programs linking more than one teacher center in the network;

• Extent of use of the center (31), as shown by the number of borrowers and by the greater use of the center by previously inactive teachers;

• Practice improvement (45) and increased capacity (48) at the school level, as testified by area teachers, and

• Greater within-school linkages (43), resulting from such teacher center projects as this one.

6.2.3. The One-day Shut-down Serial

This serial appears to follow a problem-solving sequence, moving from a felt need through the application of a solution to an irritating set of institutional problems.

Awareness of need. After the first two months of operation during the 1979-80 school year, teacher center staff members felt that operations were not going smoothly. There were logistical problems; each of the three staff members put in a half-time effort but had virtually no communication with one another. The secretary felt she was underpaid. The new co-coordinator, Claudia Herrick, was dissatisfied, feeling that her work consisted chiefly in baby-sitting the center. Visits to the local schools were problematic; some teachers felt center staff were "spying." Sally Carr was unhappy about the quality and usefulness of the activity centers she had created. She also felt her job was unclear and wanted a contract drawn up for her. Grace Bush felt overloaded with responsibilities.

Bush talked over the problem with another resource colleague, Joanne Peters, during a coordinators' meeting in January, 1980. Peters had a loose assignment to help both the Arcadia and Three Rivers centers, but had spent more time at Three Rivers. She agreed with the diagnosis and suggested a one-day retreat session, during which the center would be shut down. Bush asked Peters to be a process person for the meeting, so that staff members would stay on track. Peters than drew up a list of concerns voiced by center staff and circulated it, to be certain that the core issues for each staff member would be addressed.

Application of the solution. The meeting was held early in February. It appeared to have gone smoothly and to have been productive. The group made several decisions. A weekly staff meeting was planned, and provisions were made for daily logs to be filled in by staff so others would be informed and follow up. Individual roles were defined; Claudia Herrick took on more responsibilities (e.g., monthly calendars, work on activity centers). The staff decided to visit schools after workshops but not otherwise, and not to assign schools to specific staff members, as had been done previously. More visits were planned. Sally Carr was given a more precise job title and was promised more help in the elaboration of new activity centers.

Outcomes. Grace Bush felt the meeting had been useful, but that many of the agreed changes had not taken place. Sally Carr had been skeptical about the one-day meeting and said that the meeting accomplished little. Claudia Herrick felt the same way. Taken point by point, however, the retreat session did resolve some institutional problems:

- Staff communication improved, although the weekly meetings were often cancelled and telephone contact replaced the logs.
- There were fewer activity centers and they were better integrated into workshops and special projects.
- Staff members felt better about the distribution of authority and work.

Follow through was less successful with the decision on school visits (fewer took place, whereas more had been programmed, especially to secondary schools) and overall agreement on goals, which still separated Grace Bush and Claudia Herrick. Apparently, Bush felt that management of the center should be collegial ("no bosses") and that assistance given to teachers should be non-directive (e.g., "not telling a teacher what to do with a gifted pupil when advice was asked for"). Herrick wanted more administrative structure and stronger initiatives on behalf of users. In the end, Herrick decided that these issues could not be resolved satisfactorily; she resigned. Carr left in the summer of 1980, planning to return, but budget cuts eliminated her job. There were indications that Bush too had been worn down by the organizational and interpersonal dynamcis of the center. Her work overload had not lessened. She had tentatively decided not to stay on as coordinator the following year, but rather to concentrate on her dissertation and

teaching assistantship at North Central.

Analysis. This serial illustrates a different set of core variables in the causal network from those we have looked at. These focus more directly on staff characteristics and teacher center management. Six such variables are listed below:

- Role demands on coordinator (39a), stemming from inadequate staffing to handle all the center's programs and from organizational confusion over the division of labor among staff;
- Decentralized management (46a), as illustrated in Bush's insistence that a collegial style of decision making be preserved. This option also reflects coordinator ideology (11), in keeping with the non-authoritarian philosophy of the Experimental Program.
- (Low) staff stability (46), with the announced or likely departure of all center staff personnel aside from the secretary;
- (Low) leadership stability (40), shown here in the resignation of one co-coordinator and the likely resignation of the other;
- (Low) career-relevant incentives for IOA staff (39), reflected well here in Bush's decision to follow an academic career line that did not overlap with her role as co-coordinator. This is in contrast to Don Lessing and Carla Smetana at Arcadia State, whose in-service activities at the teacher center fed into their work with pre-service teachers and brought both of them further along the career trajectory they had set out for themselves in Arcadia.

7. CAUSAL NETWORKS*

7.1. GENERAL MODEL

In order to map and analyze the properties of the interorganizational arrangements being studied, we attempted to isolate the factors that appeared to account for the outcomes obtained in each of the cases studied in detail. Two types of factors were extracted: those which were common to all cases - some 52 core variables - and those which were case-specific. For the most part, the core variables were empirically driven, i.e., they emerged as important determinants or mediators across the three cases. We then grouped these factors into empirical clusters and laid them out in the time-linked model shown in figure 7-1. Variable definitions are given in the discussion of the causal network (section 7.2.3)

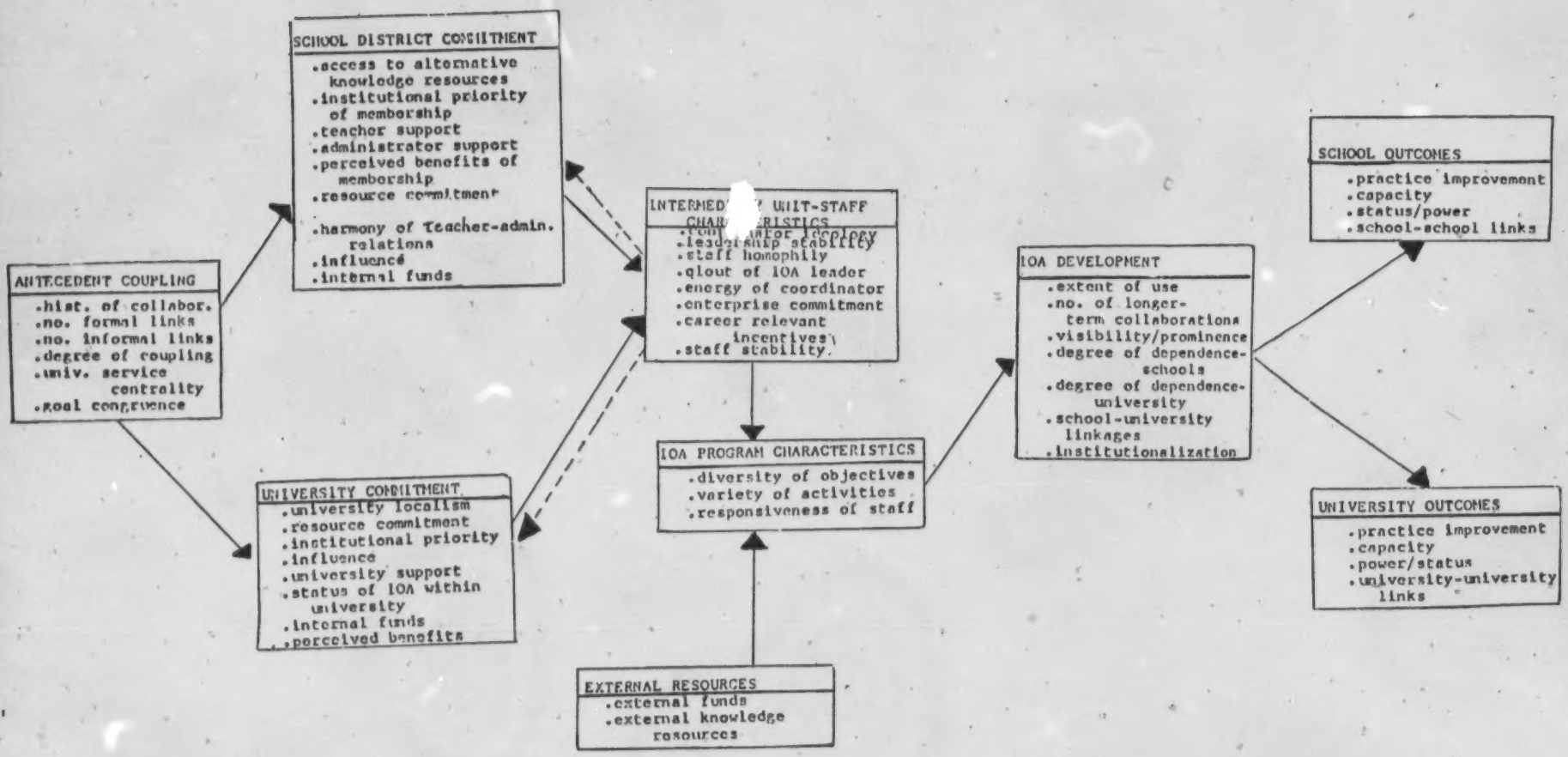
To review the diagram rapidly and in a highly simplified way, we can view it as depicting the life cycle of the interorganizational arrangement, beginning with the relationships between the college/university and the school district(s) prior to the creation of the arrangement. We hypothesize that the closeness and positive nature of antecedent coupling determines to a great extent the commitments made to this enterprise by the school district(s) and by the participating college of education. The strength of these commitments than reinforces - or in the case of low commitment,weakens - the efforts of staff members of the arrangement. In some cases, the characteristics of the leader or coordinator of the arrangement can influence the level of commitment in the participating colleges and schools - thus the broken line leading from staff characteristics back to the boxes for school and university commitment.

Staff efforts lead to the design and implementation of the IOA program. Successful arrangements are characterized by diversity of objectives, variety of activities and responsiveness to requests or needs of participating units by IOA staff. The program can also be strengthened by external inputs, in the form of funds and/or external information and expertise.

---

* The procedures and products outlined in this section were developed by M.B. Miles and A.M. Huberman in a national study of educational innovation, Crandall, D.,et al, A Study of Dissemination Efforts Supporting School Improvement. Andover, Mass., The Network, 1981. Any use of the procedures and tools should be credited appropriately.

Figure 7-1 General Model for the IOA



The success of program efforts can be judged by the indicators of IOA development, including the degree of use by members, the number and closeness of ties and the degree to which the arrangement becomes durably institutionalized. Differing degrees of development should then result in differing outcomes at the school and college levels.

7.2. CAUSAL NETWORK FOR ARCADIA

Practically all the core variables applied to Arcadia, and are laid out in Figure 7-2. For ease of understanding and use, we take readers through the same introductory comments and instructions as were given to readers at the site who were asked to feed back on the accuracy and exhaustiveness of the causal network.

7.2.1. Introduction

In trying to find an economical way of summarizing our understanding of the site, we have constructed a "causal network" for each of the IOAs and, if this was the case, for each of the prominent sub-units (e.g., teacher centers linked to a college or university).

The causal network tried to put on one fold-out sheet the main factors and the ways in which they influence one another during the life of the ICA, up to the point at which we stopped collecting data (for most cases, Jan. - March, 1981). There are two kinds of factors in the network: general factors, ones which seemed important at all the sites to explain the pattern of events and outcomes; and site-specific factors. For example, on the causal network for Arcadia scale of site (4) and inter-university competitiveness (23) are variables unique to Arcadia.

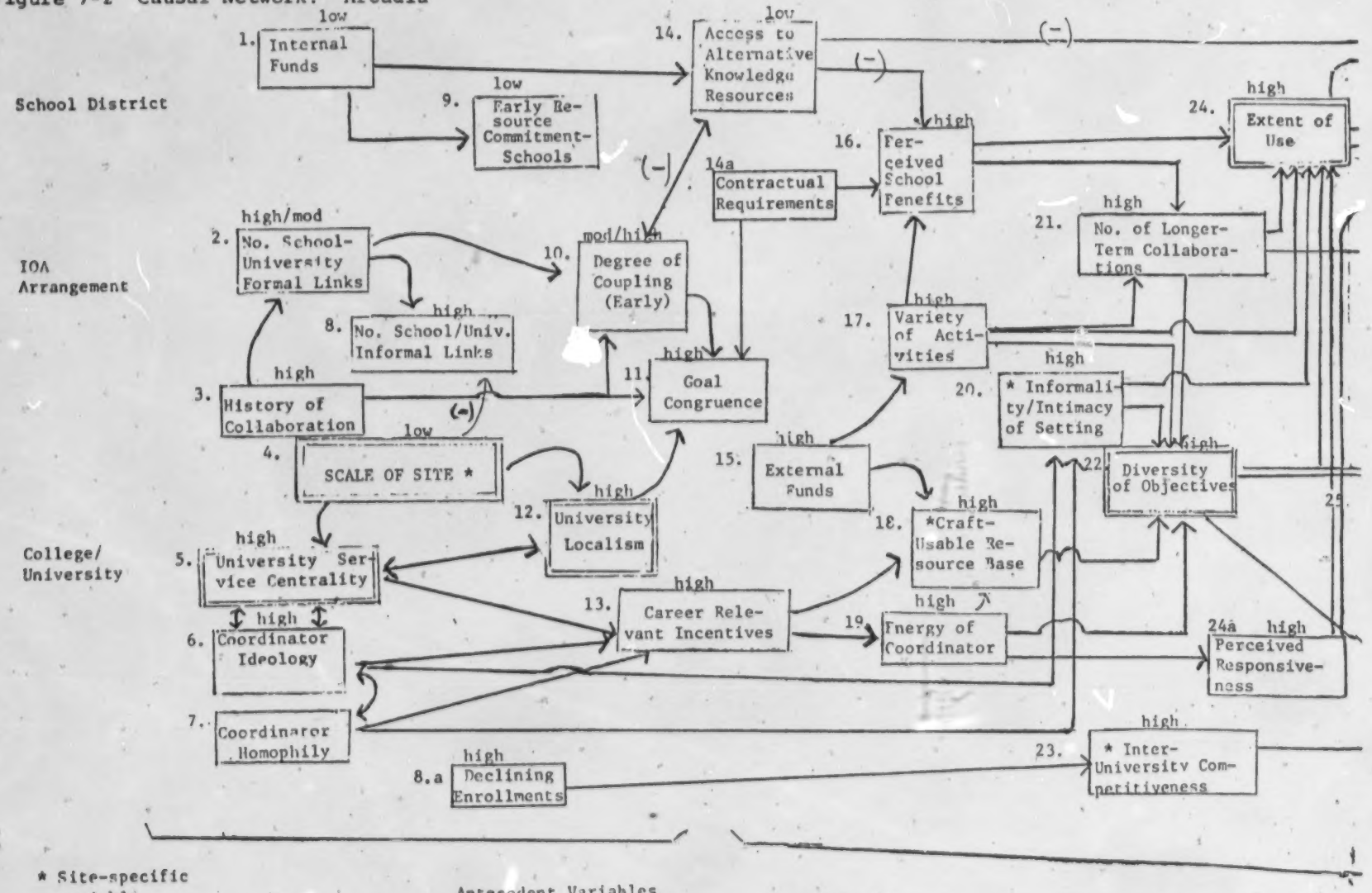
Also, some of the factors (or variables, as we have called them) are in boxes with double lines and others with broken lines. Double-lined boxes denote variables we thought were of particular importance. Broken-line boxes contain variables we thought of relatively little importance, but important to include as a contributing factor.

At first glance, the figure with its 50-odd boxes and thicket of arrows probably looks more like a maze or Rube Goldberg machine than a coherent flow chart. As it turns out, we think that you should be able to decipher it without much trouble by using the explanatory text which accompanies the flow chart. At this state of our work, we do not think that a more simplified figure would do justice to the real complexities in these IOAs; nor would it allow us to compare them and to assess whether the current theories about knowledge utilization and interorganizational linkage can account for what we found.

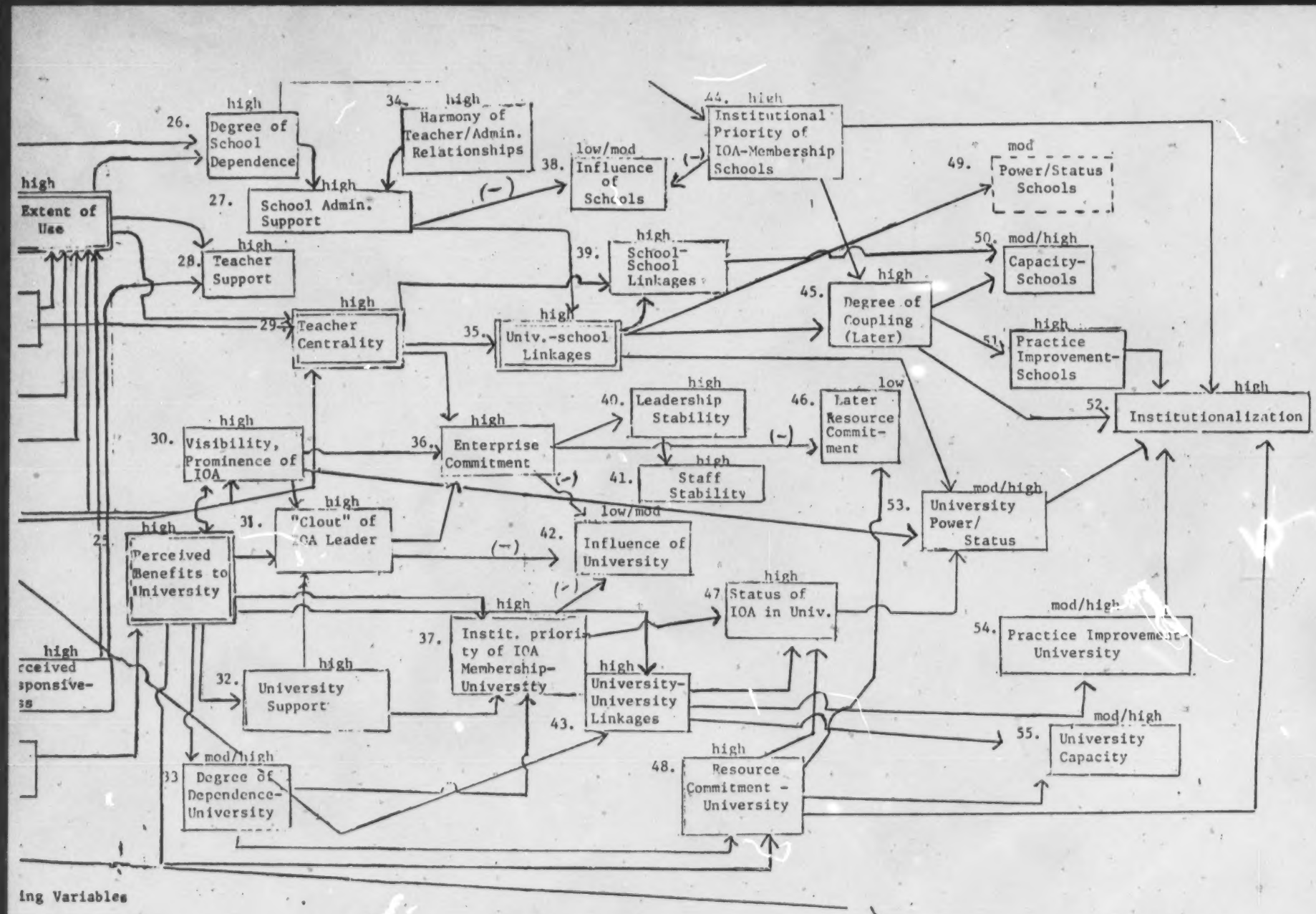
7.2.2. How the Network is Organized

The network flows as follows: the beginning or antecedent variables are at the left of the page (nos. 1-12). They give way to intermediate or intervening variables, which usually come later in the history of the IOA; they cover variables nos. 13-48. The outcome variables are arrayed in the far right column, from nos. 49-55.

Figure 7-2 Causal Network: Arcadia



continued on next page



ing Variables

1980]

Each box has a rating, high or low. For instance, box #3, "history of collaboration," is high, denoting a school-university collaboration which was fairly active before the IOA was created. The arrow goes to box #2, "no. school-university formal links," indicating that the history of collaboration contributed to a high/moderate number of formal arrangements between the two partners prior to the formal creation of the IOA.

Some boxes have "low" ratings, such as #14, "access to alternative knowledge resources" (besides those provided by the intermediary agency of IOA). Low does not mean negative or inadequate. For example, box #4 signifies small-scale, not poor scale.

When an arrow goes from a "high" box to another "high box" there is no sign above the arrow. The same is true for arrows connecting "low" boxes. However, then a "high" box is connected to a "low" box or a "low" leads to a "high" there is a (-) sign above the arrow to indicate a reverse causal influence. For instance, (smallness of) scale of the site, box #4, helps to create a high "no. of school-university formal links, box #3." The low-to-high sequence accounts for the (-) above the arrow.

One final detail: There are three global streams in the flow chart. The stream along the top of the figure has most of the school district variables. The stream along the bottom has most of the college/university variables. The center stream contains the variables for the IOA as a whole.

It might be best to read through the commentary which follows, then look back at these orienting remarks, then read the commentary more carefully as you follow the causal flows on the figure.

7.2.3. Reading the Network for the Arcadia Site

For the Arcadia school district, the antecedent variables prepared it well for a more intensive involvement with Arcadia State. There were few internal funds (1) to organize its own in-service activities and, as a result, a low commitment of resources (9) to Arcadia State prior to the creation of the Arcadia Teacher Center. There were also few resources in terms of materials or expertise near at hand (14), partly as a result of low funds and partly since the district and surrounding counties had close ties (were closely coupled) with Arcadia State (10). When the Arcadia Teacher Center was created and received external funding (15), thereby increasing its already voluminous resource bank (18) and allowing for workshops and special projects along with borrowing materials (17), the surrounding school districts perceived the teacher center as a highly beneficial resource (16) to have nearby. This was even more the case since the center provided

an easily accessible and productive way of getting in-service credits needed for contract renewal (14a).

The antecedent variables for Arcadia State College also predicted the creation of more intensive links with surrounding schools and teachers. The college had a strong commitment to service and outreach (5), with a correspondingly lower priority for publication and research. Much of this was due to the small scale of both the college and the surrounding districts (4) which the college was meant to service; the college saw its principal clientele as local (12) rather than state-wide or national. There was therefore a good match when the ideology of the future teacher center coordinator (6) stressed outreach and practice improvement within the surrounding schools. Another important characteristic of the coordinator was his background as former teacher and administrator, which made him a "homophile" (7) of the teachers and thereby a good boundary-spanner between the college and the surrounding schools. These three factors - service centrality, outreach centered ideology and coordinator homophily - combined to orient the career incentives of the coordinator (13) toward a more teacher-sensitive approach in his own college-level instruction and a desire to make an impact on the local educational landscape.

The predictors of the interorganizational arrangement as a whole overlap with the school district and college variables. The history of collaboration (3), notably in connection with pre-service training of teachers, led to a high/moderate degree of linkage (2) between the college and surrounding schools and meant that the two entities were moderately well coupled (10), i.e., interdependent, before the teacher center was created. There was also, and as a result of the collaboration and coupling, good congruence (11) between the objectives of the college and the objectives of local school officials and teachers.

The intervening variables begin around the 1975-76 school year as the future coordinator moved into a new, enlarged space for his teaching and began to assemble a large resource bank comprising (18) kits, games, teacher made materials, commercial programs and publishers' series. The resource bank also grew as a result of two streams of external funding (15), one from special in service projects (e.g., the non-degree program and the special education project) and the other

from the statewide Teacher Center project with which Arcadia State was affiliated as a charter member in 1977. External funding allowed for a widening of the in-service format to include workshops and summer seminars along with special projects sponsored by the statewide network (e.g., the poets in the schools project). The variety of activities (17) along with the wealth of the resource base, heightened the perception by surrounding administrators and teachers that the teacher center is of benefit to them (16).

The center than appeared to take off. The energy of the coordinator (19) fueled by career-related motivations of service and of increased local impact, led to a diversification of objectives (22). In-service concerns grew; attempts were made to connect other college members to the center. Mechanisms were put in place to encourage teachers to make instructional changes using the center as a resource bank and a stimulant; one-on-one consultations between area teachers and teacher center staff became more frequent. Use of the center also grew as a result o the coordinator's perception that area teachers would come more often, have more professional exchanges with other teachers and exploit the materials bank better if the center were informal and physically comfortable (20) and if teachers were made to feel that Arcadia College staff were concerned about their professional development.

The diversification of objectives (22) seems to be a linchpin. Part of activity diversification involved longer-term collaborations (21) between teachers and the center. For example, teachers brought their pupils in for two-week periods; they planned and initiated an individual project during the summer workshops and followed through on it by borrowing materials from the center and reporting on outcomes. These two activities got the center into the change-accelerating business more directly and the fostering on practice change becomes a more salient objective (22). As this happened, more teachers came to use the center for one of its several functions (24). There was a resulting heightening of teacher support (28) for the center and a greater dependence by area administrators on the center as the principal resource for in-service training and ongoing instructional improvement. This in turn increased an already high level of support for the center

on the part of area administrators (27). Diversification of objectives also led to other shifts. Use of the center became more central to teachers (29), more built into their monthly and yearly routines of planning instruction, making curriculum or organizational changes, differentiating the learning process in class, enriching back-up materials and getting stronger in weak areas. Teacher centrality in turn intensified the links between the center and surrounding schools (35), which in turn coupled the two partners still more closely (45). Also, as the center intensified these links, teachers found themselves exchanging materials, ideas and experiences (39) more than in the past. Finally, diversity of objectives added to the visibility and prominence of the teacher center (30), not only in the area schools but also within the college where it was seen as successful, as a resource for other departments and as a source of increased funding, better recruitment of freshmen and of better job placement for graduating teachers (25).

The antecedents and consequences of support within Arcadia State College were important factors in accounting for outcomes obtained through the teacher center. As the number of high school graduates declined (8a), there was increased competition between colleges/universities in the same catchment area for recruitment of new students (23). This also created funding problems at the competing institutions. As the Arcadia Teacher Center brought in funds through enrollments in workshops and special projects, and as it seemed to be an attraction for high school seniors shopping around among the various colleges and universities, the Arcadia college administration saw the benefits accruing to the college (25). These perceived benefits heightened the influence or "clout" of the coordinator (31), as did the increased prominence of the center in the area and within the statewide teacher center network (30). This contributed to the strengthening of the coordinator's commitment to the teacher center enterprise (36), leading in turn to leadership and staff stability (40 and 41). Also, the benefits perceived by the college induced still stronger college-level support for the center (32), a greater degree of dependence on the center (33) as a centerpiece for recruitment and outreach, a higher priority of the center within the college (37) and an increased commitment of resources (48), notably space and funds for purchasing more resource materials. As the college committed these

resources, it also picked up the part of the funding provided externally through the State-wide network and thereby helped to ensure the institutionalization of the center (52) as an internally budgeted operation.

Moving closer to the outcomes along the bottom or college "stream" of variables, diversity of objectives (22) included an attempt to draw other college instructors and departments into the center, both as users and as partners in collaborative projects or integrated pre-service coursework. This enhanced links between the center and the rest of Arcadia State (43) and even to some degree between college staff itself. These links heightened the status of the center (47) among college staff and ultimately increased the college's capacity for service/outreach, along with increasing the resource pool available for college professors using teacher center materials and facilities (54). It should be noted, however, that these increases were moderate; the center did not revolutionize the college.

Two intriguing intervening variables, influence of school officials and teachers on the center (38) and influence of the college administration on the center (42) bear some comment. Both were judged low-moderate. The logic here is that while teachers and administrators had clear and strong input into the center through its governance and materials-purchasing procedures, many if not most of the center's thrusts came from its staff, notably from its coordinator. Examples were the special projects (non-degree teachers, water diversion project, energy education, nature studies, one-week workshops with follow-up and two-week visits by area teachers). The area supported the center strongly (27) and considered it a high priority (44), but showed such support in some self-effacing ways, generally by approving all initiatives coming from the center. Note also that both the early and later resource commitment by the schools (9 and 46) were low. There were in-kind services, such as release time and transportation to the center, but no funds, for example, for staff or physical space. Such resource commitment would have been forthcoming had it been asked for. But influence from school districts might have been greater if more considerable resources had been invested. As the arrow from #48 to #46 shows, the fact that the college picked up all the fixed costs reduced the necessity for area schools to contribute funds.

The logic for #42 is similar. As the figure shows, the enterprising "clout" of the coordinator, together with his commitment and high "ownership" of the center, put the college administration in a more passive, almost "blindly" supporting mode. The teacher center had a high priority for college officials (37) who realized that this had not been their initiative and that the best way to nurture it was to give it carte blanche. So college officials were not influential as much as they were supportive. There is one caveat here. The department chairman was instrumental in most of the center's endeavors, but should be seen more as a partner in the project than as an administrative facilitator.

Looking now at the outcomes, the area teachers and schools did not grow measurably in power or status (49) as a result of the arrangement. Collaborating with the college was not seen as a status enhancement, largely because of the smallness of scale and the service/outreach orientation at Arcadia State. Teachers did report a heightened sense of professionalism, but this was better connected to the enlarged sense of capacity (50) perceived by teachers and administrators. With the center's resources at hand, more could be undertaken and accomplished, and teachers could remain abreast of the field. The various workshops and consultations resulting from the tighter coupling between the college and area schools (45) led to widespread reports of practice improvement (51) in the classroom, notably in areas of weakness.

As mentioned earlier, the growth of the center also contributed modestly to capacity enlargement and practice improvement within the college (54 and 55). And both the new prominence of the teacher center (30) and the resources it brought in as a result of closer college-school linkage (35) enhanced the status and influence of Arcadia State (53), leading it, for example to propose a post-graduate program of which the center would be a central component.

7. CAUSAL NETWORKS

7.3. CAUSAL NETWORK FOR THREE RIVERS

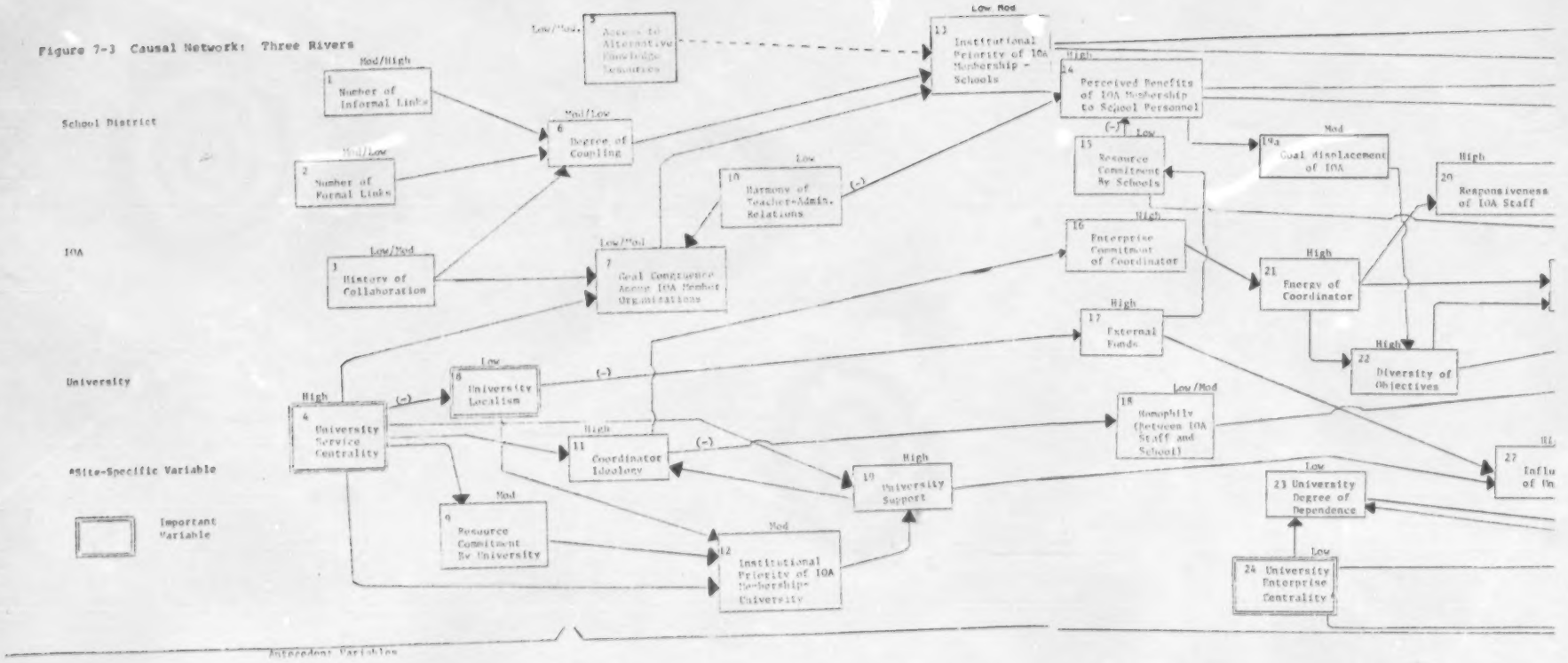
A network for Three Rivers was worked up using the same procedures as for Arcadia. Assuming that the reader has a good grip on the general structure of Figure 7-3, the causal network for Three Rivers, we move directly into the commentary.

The antecedent conditions (variables 1 - 10) were not, on the whole, favorable to the creation of a successful interorganizational arrangement. While there was a history of collaboration (3) between the school district and the university, it was an uneven one, often punctuated by mistrust and criticism. This kept the degree of coupling (6) at a modest level, mostly centered on the pre-service training of teachers which was housed in the university. Most of the formal links (2) come from this function. There were also some informal links (1) owing to the fact that the university was the most prominent employer in town; there were a fair number of school teacher-university staff couples. Also, many of the college of education staff were former teachers, and appeared to have kept or built informal links with teachers and administrators in the district and surrounding counties.

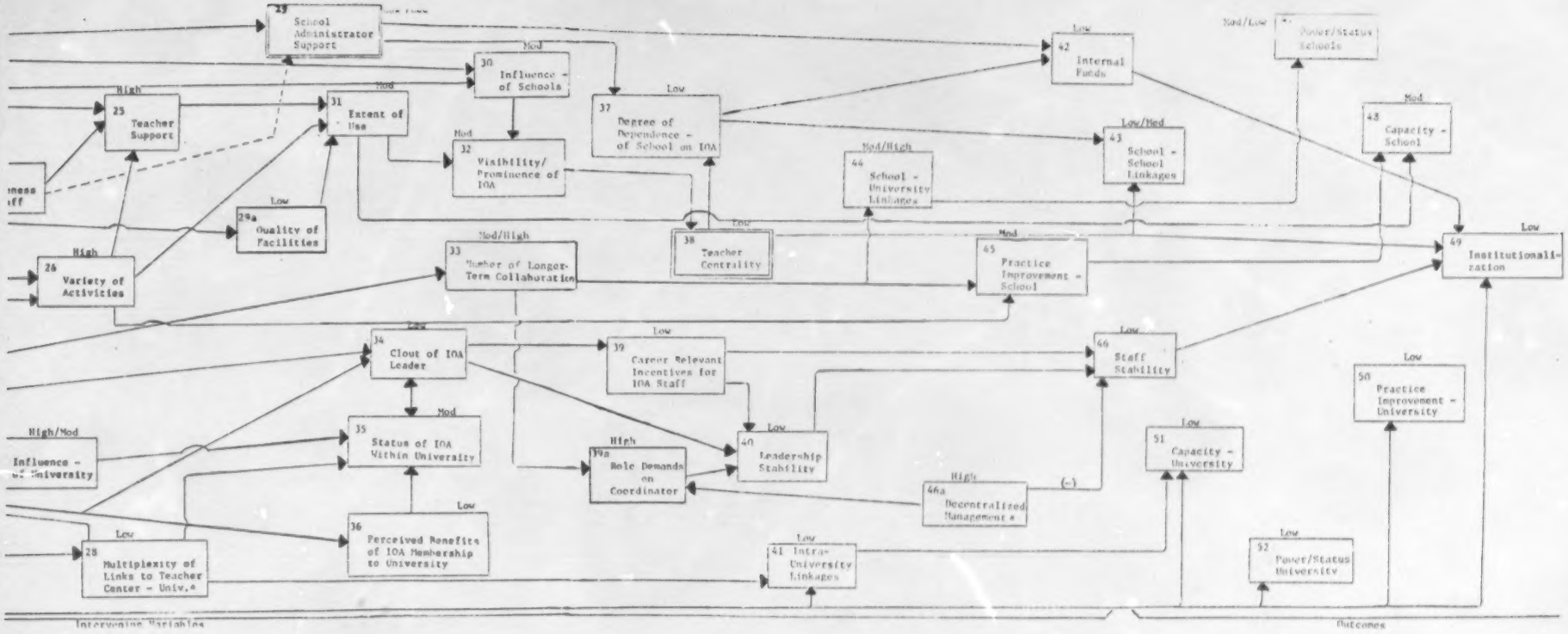
As a state university emphasizing service and outreach (4), North Central shared many of the goals of practice improvement to which administrators and teachers subscribed. But the activist and - to some - doctrinal nature of the university's service commitment lowered congruence of goals with school people (7). Within the school district there were also frictions, notably between district teachers and administrators (10). Also, the service centrality of the college of education was not primarily local (8), but rather statewide In fact, the local teacher center derived from a statewide project. This and advantages. For example, external funding (17) was easier to obtain for a state-level operation.

Since the college of education was at the origin of this arrangement, taking the initiative and finding the needed funds, its commitment to the local teacher center was strong. The college called on some of its own resources (9) in staff time and budget, gave a fairly high priority to the creation of the arrangement (12) and supported the venture actively (19). It recruited new leadership after locally chosen staff proved ineffective. The new coordinator shared in the ideology of the

Figure 7-3 Causal Network: Three Rivers


School District
IOA
University
Site-Specific Variable
Important Variable
Interdependent Variables
1 Number of Informal Links
2 Number of Formal Links
3 Access to Alternative Knowledge Resources
4 University Service Centrality
5 Degree of Coupling
6 University Localism
7 Goal Consistency Among IOA Member Organizations
8 Resource Commitment By University
9 Institutional Priority of IOA Membership - University
10 Harmony of Teacher-Admin. Relations
11 Coordinator Ideology
12 University Support
13 Institutional Priority of IOA Membership - Schools
14 Perceived Benefits of IOA Membership to School Personnel
15 Resource Commitment By Schools
16 Enterprise Commitment of Coordinator
17 External Funds
18 Homophily (between IOA Staff and School)
19 Goal Displacement of IOA
20 Responsiveness of IOA Staff
21 Energy of Coordinator
22 Diversity of Objectives
23 University Degree of Dependence
24 University Enterprise Centrality

continued on next page


29 School Administrator Support
30 Influence of Schools
Mod
42 Internal Funds
Low
Mod/Low
Power/Status Schools
High
25 Teacher Support
31 Extent of Use
Mod
37 Degree of Dependence of School on IOA
Low
43 School - School Linkages
Low/Mod
48 Capacity - School
Mod
32 Visibility/ Prominence of IOA
Mod
44 School - University Linkages
Mod/High
29a Quality of Facilities
Low
26 Variety of Activities
High
33 Number of Longer-Term Collaboration
Mod/High
38 Teacher Centrality
Low
45 Practice Improvement - School
Mod
49 Institutionalization
Low
34 Clout of IOA Leader
Low
39 Career Relevant Incentives for IOA Staff
Low
46 Staff Stability
Low
50 Practice Improvement - University
Low
High/Mod
Influence - University
35 Status of IOA Within University
Mod
39a Role Demands on Coordinator
High
40 Leadership Stability
Low
51 Capacity - University
Low
46a Decentralized Management
High
(-)
28 Multiplexity of Links to Teacher Center - Univ.
Low
36 Perceived Benefits of IOA Membership to University
Low
41 Intra-University Linkages
Low
52 Power/Status University
Low
Intervening Variables
Outcomes

college of education (11) by valuing craft knowledge, collegial decision-making and by calling for teacher-defined and teacher-governed programs at the teacher center. However, the new leader was not local to the area (18). Lack of shared background led initially in subtle ways to a lowered commitment by area teachers and possibly by area administrators who saw the teacher center as a "foreign" venture, even if the university bent over backwards to transfer to local control the overall governance and day-to-day management of the center.

Coordinator ideology, buttressed by university support (19), did lead to strong commitment to the enterprise (16) on the part of the coordinator, contributing in turn to high energy (21) and effective responsiveness (20) to requests from participating schools. This, in turn, heightened teacher support (25) of the teacher center, contributing to a moderate extent of use (31) by the pool of district and county teachers. The coordinator's energy and commitment also increased the variety of activities (26) and the diversity of objectives (22) of the center, adding on, for example, the role of "middleman" in the organization of university-sponsored extension courses. Some of these efforts involved continuous contacts or a continuous series of events (33).

Moving back for a moment to the university stream, we noted its resource commitment (1) and the priority (12) given to the teacher center. The university's influence (27) on the teacher center was also strong, although indirect (it administered teacher center funds, participated actively in its governance, invested two "resource colleagues" in its operation and came to its aid in difficult moments). The College of education dean was personally committed to the venture, raising its status (35) among College of education staff. But the teacher center was not a central concern of the university (24) when set against other programs and commitments. Nor were many of the college of education staff active in the teacher center (28) in other than episodic ways. Apart from some members of the elementary education department, most staff had no connection to the center. This meant that the degree of dependence of the university (23) on the center was nil and that the benefits expected from the center were slight (36), both factors acting to depress the status of the teacher center (35) in the College of Education. Ultimately, low centrality and few links meant that the teacher center had little impact on the college of education.

The center did not contribute to more within-university links (41), did little to enhance the power or status of the college or its members (52), added little to the college's institutional capacity (51) and improved instruction (50) only marginally. Those staff members with a continuous or intense link to the center, in particular the coordinator, were all positively affected, but were few in number.

Moving now to the school district stream, we noted that the district had relatively few knowledge resources (5) available prior to the teacher center, although the university did have an active extension and post-graduate program. The center did add some important craft-usable knowledge resources otherwise unavailable. This heightened the institutional priority (13) of membership in the teacher center which otherwise was low as a result of goal incongruence (7) and of very loose coupling (6) apart from pre-service training. But perceived benefits (14) were high for teachers who in one of their confrontations with the administration (1) sought to maintain control over in-service policy and saw the teacher center as an important resource "belonging" to teachers. Also, in the initial years, external funds and university resource commitments took the lion's share of financial support, so that the district came away with a great deal of resources for a very low commitment (15) on its part. Finally, and most important, teachers were able to obtain at the center,with less effort than elsewhere, contract recertification credits that could be applied to salary increments. In fact, the demand for these credits led to a greater number of large-scale workshops which the founders and staff of the center viewed as a displacement of goals (19a) from the original mandate.

These benefits, together with coordinator and center staff responsiveness (20), increased local support (25) for the center, contributing to a wider extent of use and thereby to the greater visibility (32) of the center in the area. Extent of use also grew as the center increased its gamut of activities, notably in offerings for secondary-level teachers. However, use was limited by the constriction and poor accessibility of the center's facilities (29a), which was a reflection of low resource commitment on the part of school district administrators (15). For them, the project remained a low priority (13) item. They seem to have provided little firm support (29), when the four-year history of the center is surveyed, and to have exerted little influence (30). They underplayed their dependence (37) on the center

for in-service functions. But,for all of these reasons, teacher ratings were higher. The center was a higher priority (13); teachers felt they had a strong influence on policy and programming (30); dependence on the center (37) was higher. Still the center did not seem to be a core activity for teachers (38); it was appreciated but not deemed indispensable. Such lack of centrality for the teachers was one factor that weakened the ultimate institutionalization of the center (49). Nonetheless, through their contacts with the center, teachers reported greater links with college of education staff (44) and several instances of instructional practice improvement (45). Overall, center resources made a modest contribution to the instructional capacity (48) of area schools. The center also enhanced the status (47) of teachers both by appealing to their professionalism and by showing that the college of education staff was investing in local staff development.

However, these increments at the level of individual teachers were not enough to ensure institutionalization of the center. Low school administrator support ultimately translated into a lowering of internal funds (42) to the teacher center, thereby forcing the center to limit its plan of operations. To some extent, teacher support made up for low administrator support, but did not alone ensure institutionalization (49).

Nor did the university stream lead to firm institutionalization. In its efforts to promote local ownership, the college of education backed away from direct control or influence. It also helped to put in the coordinator's post a staff member who was non-threatening but also had little institutional clout in either the school district or the college (34) by virtue of being a graduate teaching assistant. The career incentives (39) of the new coordinator were not furthered by this job. This, added to over-extension from managing the multiplicity of activities and the decentralized administration procedures, led to low staff stability and uncertain leadership stability, which in turn further lowered institutionalization of the center.

APPENDIX 1: A WALK AROUND THE ARCADIA TEACHER CENTER (May, 1980)*

There are six main areas in the principal resource center, with more materials in the main corridor, which runs from one area to the next. These areas apparently are reconfigured each year and in function of special projects such as workshops or presentations.

The first center is called Kiddieland. It has a number of puppets, musical instruments, a selection of children's literature with a sample of books opened out on the shelves. This sample includes both materials for teachers and reading materials for pupils. There is a small workspace for the pupils and a little log cabin with cushions and lights for reading. Like some of the other areas in this center, Kiddieland can serve three simultaneous functions: a working place for children, an area where activities for groups of children with teachers can be organized, and a resource bank for teachers looking for and borrowing materials.

The second area is called the Resource Area. It has a number of kits in relation to science and math. There are the National Geographic map skills kits and other National Geographic series, including books, filmstrips, and tapes. There are materials for number games using straws and blocks. There are a series of mathematics programs from the principal publishers: Scott Foresman, Rand MacNally, Holt-Reinhart and Houghton Mifflin. There is also a display of "math centers you can make," and readers and teaching materials for biology, ecology and energy units. There are even some texts in this area on driver education and a self-instructional guide to federal income tax.

In the hallway, opposite the second resource area, is a book display shelf which contains literature on informal schools in Britain, as well as the North Central University evaluation series. (This is one of the places where the general pedogogical and philosophical orientation of the network is visible.) The third area has a sign over it reading: "Read, relax with rhythm." It has a piano with records and cassettes (There is often music playing during the day in the Center.)

* excerpts from field notes

There are a number of magazines, many of which are popular publications such as Psychology Today, Time, Human Nature, Sports Illustrated, Science Digest. On the next shelf are educational journals which are frequently read by teachers such as Teacher-Instructor, Learning, Today's Education. On the next shelf are some historical and biographical novels, as well as some popularized history or political science books. (For example, one by Pierre Salinger.)

The fourth area is an art area...it is filled with displays of children's art under the rubric "Ideas and Projects." There is also scrap paper for making art materials.

In the corridor next to this area is a bulletin-board with some announcements of educational programs in the area, some news clippings about the center, and a map showing the location of the eight school districts belonging to the center. The farthest are approximately 70 miles away. Two of these are, in fact, very close to Three Rivers.

Next is the Idea Area where there are projects by students, suggestion books like the Good Apple, a series of suggestions for art activities using puppets, a handbook for arts and crafts activities with children,a bulletin-board with a list of ideas for creating learning centers and accompanying handbooks, a display of "special kid stuff" which is high interest, low vocabulary reading with some accompanying language skills activities.

The sixth area is the Science and Reference Area. It also has a number of kits, notably from Rand MacNally, with accompanying lists for building, measuring, and experimenting. There are materials on teaching metrics, a series of filmstrips from National Geographic, and science materials and kits from the main publishers with an emphasis on earth sciences and energy. There are a series of pocketbooks on butterflies, birds, fossils, etc.

This area gives out onto a central classroom area with four large tables. Along the wall are some tools, a poetry corner (with books specifically for children), ("Poems Children Enjoy"), and anthologies. There are also some books on classroom discipline, improving children's self-esteem, inexpensive classroom media, etc. Further down the shelf are some introductory books on psychology

of education and two texts - the only of this sort I have seen which are frequently found on university-level education reading lists; Current Research on Instruction and Combs' Professional Education for Teachers.

In a corner of the room, on the other side of a divider, is a workbench with scissors, knives, glue, tape, crayons, paint, chains, nails, pushpins, etc... all for creating new educational materials.

In the other room, which is about 1/5 of the size of the main resource room, where Carla Smetana does her instruction, are six tables and a rug, which gives the room a more intimate, comfortable sense. On the walls are all of the main reading series from publishers in reading and language arts. Carla has told me previously that she considers it important that teachers be aware, not only of what one series can offer, but what the gamut of reading programs is from all of the published language and reading arts series.

MODIFICATIONS AND EXTENSIONS TO THE CENTER (November, 1980):

I look around the teacher center before we do the interview. It is striking how many new displays, murals, and materials have been added in the six months between interviews. There has also been an obvious extension of the teacher center into several more rooms. The rate of growth and expansion seems to be as great in the past six months as it has been since the origin of the center.

In the interview with Don Lessing, I begin by asking for a review of the changes in the physical plant. We start with a new room, just off the second of the larger rooms comprising the teacher center. It's a comfortable small room with a conference table, several chairs against the wall, rug on the floor, indirect lighting through a very attractive lamp. Lessing says that it's an area for teachers to work alone or in groups as well as a display and reference area for the nature study project. This room has resource materials for children, many of them coming from the National Geographic. The room next door has reference materials in nature study, as well as some in the area of energy and ecology for teachers. They include manuals and activity books. So the teachers can browse for activities directed to their children in one room and look for teacher-centered materials in the next.

A far larger series of rooms is found in the passageway between the building which houses the teacher center and the main instructional and administrative building. This area was the focus of another of the serials, the "new room" serial. The area itself is called Old Main. Six months ago, Lessing had just negotiated for it. It is now fully operational and about three-quarters decorated. The central area in Old Main is about 40 x 20 and is being used as a classroom, meeting room and display area for energy education. Many of the materials sent by John Birdwell from North Central University are displayed in a series of shelves along one wall of the room.

Lessing also tells me that the room will be used by an instructor in the art department who works with teachers, and who is going to set up and give her art classes in this room, and will display all of the art projects there.

The Old Main area has been sectioned off to create two smaller rooms. One will house materials for special education. The special education teacher will also teach out of that room. Another will have materials for physical education. Similarly, the physical education teacher will teach from the room.

Lessing also tells me that community groups will be using this area. Already, Alcoholics Anonymous and Weight Watchers meet in the evenings in this area, and there are provisions for a new class in early childhood education to be held in the room.

Lessing then goes over changes in the central teacher center room. He has added space for activity centers, with displays changing periodically as they are sent out into the district schools and rotated among them. He says that the idea for activity centers came from the policy board. The centers are made by the student teachers. There is one which is circulating already on puppets; it includes activity cards and books to further develop the display areas of the activity centers. He expects there to be somewhere between 15 and 20 centers generated between now and Christmas time; all will be constructed by the pre-service teachers.

There are a few more display areas than before, in particular the idea center, which has books on ideas for activities for classroom use, has been expanded considerably. There are also new murals (which are beautifully drawn, far more elaborate and professional than the ones on the walls when I was here six months ago.) They have also added rugs, tables and lamps in

the new rooms. Lessing tells me that only one table had to be bought; all the rest of the furniture for the six new rooms which the center has developed in the last six months, was scrounged from elsewhere in the university or built by center personnel.